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The Lampropidae (Crustacea: Cumacea) of the World

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SARAH GERKEN

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Abstract

Prior to the present study, the cumacean family Lampropidae included 114 species. This family is primarily found in temperate to cold waters. Revisions and investigation of museum collections yielded 12 new genera (*Alamprops* n. gen., *Aplatysympus* n. gen., *Austrolamprops* n. gen., *Brachylamprops* n. gen., *Doieolamprops* n. gen., *Farragolamprops* n. gen., *Paraplatysympus* n. gen., *Phallolamprops* n. gen., *Phallolampropoides* n. gen., *Pseudoarchaeocuma* n. gen., *Quasiparalamprops* n. gen., *Reyssia* n. gen.) and 23 new species (*Aplatysympus neozealanicus* n. sp., *Austrolamprops sulcatus* n. sp., *Bathylamprops paraleucon* n. sp., *Brachylamprops scabridus* n. sp., *Chalarostylis bruunae* n. sp., *Doieolamprops confundus* n. sp., *Farragolamprops seminalis* n. sp., *F. spinacristatus* n. sp., *Hemilamprops impellucidus* n. sp., *Lamprops northwindae* n. sp., *Misceolamprops concavus* n. sp., *Paraplatysympus aspericristatus* n. sp., *P. echinolowryi* n. sp., *Phallolamprops californiensis* n. sp., *P. pribilofensis* n. sp., *Phallolampropoides chukchiensis* n. sp., *Platytyphlops bamberi* n. sp., *P. echinatus* n. sp., *P. lowryi* n. sp., *P. petrescui* n. sp., *P. taylorae* n. sp., *Pseudoarchaeocuma bacescui* n. sp., *Quasiparalamprops chathamensis* n. sp.). Additional description and Fig. of the ovigerous female and adult male of *Watlingia chathamensis* are provided. All new species and genera are described and illustrated, with diagnoses and keys to all genera and species. In addition, *Mesolamprops bacescui* is transferred to the Diastylidae as *Diastylis bacescui* (Gamô 1999).

Key words: Cumacea; Lampropidae; *Paralamprops*; *Hemilamprops*; *Lamprops*

Introduction

Cumaceans are small (1–35 mm) peracarid crustaceans, common in sandy and muddy benthic environments. While primarily marine, there are some species known from brackish to fresh water, including rivers and the Caspian Sea. Most work on the group has concentrated on taxonomic descriptions, and identification of cumaceans beyond the level of order or family in ecological publications is rare. Fish, birds, and grey whales are known to prey on cumaceans, as they can be extraordinarily abundant, up to 91,955 individuals per square meter (Moore *et al.* 2007), although abundance is typically quite patchy. Cumaceans are being explored as indicator organisms for environmental change (Meland per. comm.), as they can be sensitive to temperature (Watling & Gerken 2005) as well as grain size (Wieser 1956; Martin *et al.* 2010) and organic content (Corbera & Cardell 1995; Brandt & Schnack 1999; Brandt *et al.* 1999).

The phylogeny of the order has not been studied much using modern methods. There are currently 8 recognized families, containing over 1400 species; however, in some cases the family definitions are ambiguous, and it may not always be possible to place a specimen in a family if both sexes are not present. An early attempt to resolve this problem (Stebbing 1912) resulted in the erection of 26 families, a system that was not accepted, as effectively this placed nearly every genus known at the time in a separate family. One modern paper generated a phylogeny at the family level, using both molecular and morphological data (Haye *et al.* 2004). However, that phylogeny was not very well resolved using either type of data, and families were represented by very few sequences. The main finding in Haye *et al.* (2004) was that the pleotelson bearing families form a clade. While some species are readily available in large numbers, diverse material has not been available, preserved adequately, for comprehensive molecular phylogenetic work. Morphologically based phylogeny reconstruction has also proved to be quite difficult and not well resolved, as the major theme in cumacean evolution is reduction, which is frequently homoplasious.

Within the Cumacea, the Lampropidae is one of the more cleanly diagnosed families, as all species have a telson with at least three terminal setae and male pleopods (when present) with a medial process, which differentiate this family from the other three telson bearing families (Diastylidae, Gynodiastylidae, Pseudocumatidae) all of which either lack or have two setae terminally on the telson and pleopods (when present) without a medial process. *Dimorphostylis* Zimmer, 1921 is a rare diastylid exception in which the North Pacific species have three terminal setae on the telson in the fully adult male. However, this is a characteristic that is restricted to the adult males in these species; all other ages and sexes in these species have two terminal setae on the telson, and the adult males have no medial process on the pleopods. A recently described Antarctic species of *Diastylopsis* Smith, 1880 has three terminal setae on the telson in the female (*Diastylopsis trisetosa* Gerken 2014) but is otherwise in accord with diastylid characteristics (see Gerken 2014: 31 for a discussion), and related subadult males have recently been observed with 2 pairs of pleopods and 3 terminal setae (Roccatagliata, pers. comm.).

Lampropids tend to be relatively large (10–30 mm) and restricted in their distribution. The group is most common in cold and deep environments, and tends to be quite delicate, with long appendages and delicate, weakly calcified carapaces. Collections from the deep sea are rare, and are usually undertaken using equipment like trawls, epibenthic sleds, and dredges. Deep sea lampropids are frequently damaged during collection, more so than in other families (pers. obs.), and are often represented by a few or single specimens. Four genera and 17 species are represented by single specimens, although as additional collections are made, it is expected that more individuals of described species will be found.

Morphology

Cumaceans are morphologically distinct from other peracarid crustaceans, with a recognizable body plan with a carapace, 3 pairs of maxillipeds, 5 pairs of pereopods, 0–5 pairs of pleopods, a pair of uropods, and either an articulated telson or pleotelson. However, within the Cumacea, the morphology is largely characterized by reduction, which is frequently homoplasious. The families are characterized by combinations of telson/ pleotelson, pleopod type and numbers, mandible state, and exopod patterns. The features that are used in the Lampropidae to define the genera are carapace morphology, antennule flagella, the mandible, the maxillule, state of the first and fifth pereopods, number of articles in the uropod endopod, exopod patterns in the female, and antenna, penial lobes and pleopod number in the adult male.

Effectively, two types of carapace are found in the Lampropidae: a dorsoventrally flattened carapace with a marginal carina that may be quite broad, and a carapace that is not flattened, frequently with paired branchial swellings and a sharp dorsal ridge or crest on the frontal lobe. The flattened carapace is found most frequently in the genera from deeper water, and is probably an adaptation to resist sinking in sediments with high water content. The flattened carapace may be unornamented, or ornamented with ridges, spines or blunt spines, although the carapace ventral to the marginal carina is usually free of ornamentation. The flattened carapace form varies in the degree of flattening, from plate or leaf-like forms to forms in which there are distinct paired branchial swellings and various ridges, but these always have a distinct marginal carina with the carapace folded towards the midline ventral of the carina. With the many species in this family that have a ventrally folded carapace, the suggestion by Schram *et al.* (2003) that a ventrally folded carapace is an ancient character only associated with extinct fossil forms is incorrect.

The antennule flagella in the Lampropidae are the best developed in the Cumacea, with flagella that may be equal in length, and being as long or longer than the peduncle articles of the antennule combined. This character state has been interpreted as plesiomorphic in that the basal state of the most recent ancestor to the Cumacea would be expected to have 2 equally developed antennule flagella. There are variations in the size of the accessory flagellum, which in a few genera is much shorter than the main flagellum.

Mandible shape is used at different taxonomic levels. The most common shape in the Cumacea is the navicular form. A truncate mandible is one of the characteristics uniting the Leuconidae, but a truncate mandible is also found in the lampropid genus *Pseudolamprops* Gamô, 1989, the diastylid genus *Diastylodes*, Sars, 1900, and the nannastacid genera *Bathycampylaspis* Mühlenhardt-Siegel, 1996, *Campylaspis* Sars, 1865, *Campylaspides* Fage, 1929, *Pavlovskeola* Lomakina, 1955, *Paracampylaspis* Jones, 1984, and *Procampylaspis* Bonnier, 1896. The mandible morphology is presumably related to feeding, but as cumacean feeding has not been studied in detail, it is impossible to suggest what changes in diet may lead to mandible morphology changing from the navicular to the truncate form.

The maxillule palp normally bears 2 setae, which are used to clean the branchial lobe of maxilliped 1. Within the Lampropidae, the maxillule palp can be either normally developed with 2 setae, with a single seta, without setae, or missing entirely. It is unusual for cumaceans to be missing the palp, although some nannastacids have reduced palps. Various authors have interpreted the state of the palp as either very important in defining genera (Calman, Day, Given, Sars, Stebbing.), or inconsequential (Corbera, Fage, Gamô, Ledoyer, Mühlenhardt-Seigel) although without discussion. Parasitism, while rare in cumaceans, is most frequently observed within the branchial chamber (Alberico & Roccatagliata 2008, pers. obs.) and within the marsupium (Hansen 1897). The loss of the appendage that is used to clean the branchial lobe, and which presumably helps reduce parasitism, is difficult to interpret, because there is no obvious parallel morphological modification to take over that function. While it is a difficult character to access, I consider it an important character in defining genera.

The first pereopod is modified in *Chalarostylis* Norman, 1879 into a very robust appendage with long, stout simple setae. The function of this structure is not obvious, as it does not resemble the filter feeding pereopod found in some Gynodiastylidae (Gerken 2001). In all other lampropid genera, the first pereopod is similar in appearance, although the proportions of the articles vary. The length of the basis relative to the other articles has been used to differentiate between females of *Lamprops* Sars, 1863 and *Hemilamprops* Sars 1883, although this is not always useful as the first pereopod is frequently broken.

The fifth pereopod shows a trend toward reduction in the Lampropidae, reaching the minimum in *Stenotyphlops* Stebbin, 1912. The lampropid fifth pereopod varies from normal proportions and length, to normal in proportions but very small, to having all the articles beyond the basis subequal and very small, to a tiny 2 article pereopod in *Stenotyphlops*. The only other genus with similar reduction is the ceratocumatid genus *Ceratocuma* Calman, 1905, which lacks the 5th pereopod entirely. As the manca 1 stage in cumaceans is recognized by the lack of pereopod 5 and the manca 2 stage by the presence of a limb bud on pereonite 5, it can be confusing to encounter specimens with a minute appendage on pereonite 5, which may be either confused with *Ceratocuma* or a manca.

The number of articles in the uropod endopod is used in several families to define genera, and is used in the Pseudocumatidae as part of the family diagnosis. In the Lampropidae, uropod endopods are either 2 or 3 articles, and no species have been described in which the uropod endopod number varies due to sexual dimorphism, although this dimorphism is known to occur in some species in the Gynodiastylidae, with adult males having 1 fewer article in the uropod endopod than female and immature individuals in these species (Gerken 2001). However, one female specimen encountered in this study was clearly aberrant, with one uropod endopod of 2 articles and the other endopod of 3 articles (*Aplatysympus neozelanicus*, paratype female). The 3-article state is clearly the normal one, and the 2 article uropod is missing the 2nd article.

The only character specific to females that is used to define genera is the state of the exopods on pereopods 2–4. The exopod can be fully developed (natatory), rudimentary, or absent on pereopod 2, and rudimentary or absent on pereopods 3–4. However, the utility and consistency of these characters has been called into doubt. Corbera & Galil (2001) examined many specimens of *Platysympus typicus* (Sars, 1870), including the type material, and found that the state of the exopods in the females varied, from absent to rudimentary on pereopods 2–4, within the type species for a genus which was defined originally as without any exopods on pereopods 2–4. The main consistent distinction is whether the pereopod 2 exopod is natatory, or non-functional, either through absence or reduction. Thus, the functionality of the exopod on pereopod 2 is a useful character that is consistent, but the presence or absence of a rudimentary exopod seems to be quite variable, at least for *P. typicus*. The presence of rudimentary exopods on pereopods 3–4 in the female is nearly constant across the family, with the only exceptions being *Platysympus* Stebbing, 1912, *Brachylamprops* **n. gen.**, *Aplatysympus* **n. gen.**, and *Platytyphlops rossi*. *Platytyphlops mawsoni* (Hale 1937) was originally described without rudimentary exopods, but Petrescu & Wittmann (2003) re-described the species from additional Antarctic material, and found minute exopods present. *Platysympus typicus* was originally described without exopods, but as discussed in Corbera & Galil (2001), even some of Sars' material had exopods present.

Male morphology is important in determining genera in the Lampropidae, in particular the length and form of the antenna, the number of pleopods, and the presence or absence of penial lobes.

Two forms of male antenna are present in lampropids, long and clasping. Long antennae are chemosensory, used for finding mates, and do not have an active role in the action of mating. Clasping antennae are used to clasp the female prior to molting, for up to several days, guarding her from other males so that the male can deposit sperm immediately after she molts. The clasping antenna has a reduced flagellum with hooks on the articles to clasp the female around the pereon, as shown in Sars (1900).

Natatory pleopods have long plumose setae, and are typically found in males. Female cumaceans with pleopods are only known from the Lampropidae (*Archaeocuma* Băcescu, 1972, *Doieolamprops* **n. gen.**, *Pseudoarchaeocuma* **n. gen.**), and the pleopods are not natatory, but are small with short or no setae. Pleopod number is quite variable in the Lampropidae, with males having 0–3 pairs of pleopods. Species without pleopods can be expected to be found in higher densities, such that males do not ascend into the water column and swim in search of mates, and are less sexually dimorphic. Male modifications of the carapace, pereon and pleon are commonly associated with streamlining for swimming. This pattern is upheld in some genera with 3 pairs of pleopods, such as *Paralamprops* and *Platytyphlops*, which tend to have sexually dimorphic changes in the carapace of the adult male. However, this pattern is not as obvious in *Hemilamprops*, in which the male carapace is not very different from the female, and yet the male has 3 pairs of pleopods.

Within the Lampropidae, there are now 4 genera (*Chalarostylis*, *Phallolamprops* **n. gen.**, *Phallolampropoides* **n. gen.**, *Wallingia* Gerken, 2010) with several species with penial lobes in the male. The penial lobes are simple tubes extending from the genital pores in the male, without setae or elaboration, not elaborate structures such as the penial lobes in *Campylaspenis* Băcescu & Muradian 1974. At present, in addition to *Archaeocuma* and the taxa described in this work, males with penial lobes are known from the Leuconidae (*Kontiloleucon* Gerken, 2016, *Phalloseucon*, *Pseudeudorella* Mühlenhardt-Siegel 2008), and the Nannastacidae (*Campylaspenis* Băcescu & Muradian, 1974, *Cumella*-like Daniel Roccatagliata pers. comm.). Species with penial lobes typically occur in deep and/or cold environments.

In the new genus *Phallolamprops* there are novel ventral structures on pleonites 1–2 in the adult male. The structure on pleonite 1 is an elaboration of the ventral surface, creating a deep groove in which the antennal flagella are held, with groups of long setae on the ventral surface holding the flagella within the groove. The structure on pleonite 2 varies with the species, from a smaller ventral elaboration to a bump with long setae, again with the structure holding the antennal flagella against the ventral surface of the pleon. These structures are analogous to the specialized setae found in the diastylid genus *Anchistylis* Hale, 1945, which hold the antennal flagella against the ventrolateral surface of the pleon, and are also analogous to the deep grooves found laterally in the pleonites of some bodotriid and nannastacid males, all of which keep the antennal flagella entrained against the pleon. The male antennal flagella are long and slender in most species, and it is likely that entraining them against the pleon reduces the probability of damage. However, there are hundreds of species of cumaceans in which the males have long antennae and no morphological adaptation to entraining them, suggesting that there may be some feature of the environment or life history in these species that increases male success with entrained flagella.

The philosophy behind the rearrangements and new genera proposed here is that genera should be unambiguously diagnosed, without variation in the morphological characters used for diagnosis. It is not based on a phylogenetic analysis per se, as all analysis attempts based on morphological data sets have not been well resolved. However, genera are attempts to group species that are more closely related to each other than to other groups of species. It is possible that with additional information, especially genetic data and additional specimens, that the diagnostic characters currently in use will prove to be less meaningful. However, the current state of affairs is that morphological characters are the sole source of information. While there is not agreement about which characters are most useful, and this is compounded by the tendency for lampropid specimens to be incomplete, with some taxa represented by few or single specimens, only the pereopod exopods in females have been shown to vary in *Platysympus typicus*, as discussed above. However, for the female pereopod 2, the character states used for diagnosing genera in this work are natatory or non-natatory, making it irrelevant if the exopod is non-natatory due to being rudimentary or absent.

Methods

Museum abbreviations:

Allan Hancock Foundation (AHF), resides within LACM
Australian Museum, Sydney, Australia (AM)
British Columbia Provincial Museum, Victoria, British Columbia (BCPM)
British Museum of Natural History (NHM)
Department of Biological Sciences, Dankook University, Cheonan, Korea (DKU CUM)
Los Angeles County Natural History Museum (LACM)
Museo Nacional de Historia Natural de Santiago, Chile (MNHCL)
Muséum national d'Histoire naturelle, Paris (MNHN)
Museum für Naturkunde Berlin, previously Universität Humboldt, Zoologisches Museum (ZMB)
Museum 'Grigore Antipa', Bucharest, Romania (GAM)
Museums Victoria, Melbourne, Australia (NMV)
National Museum of Scotland (NMSZ)
Nationaal Natuurhistorisch Museum, Leiden, the Netherlands (RMNH)
National Institute for Water and Atmospheric Research, Wellington, New Zealand (NIWA)

National Institute of Biological Resources, Incheon, Korea (NIBRIV)
National Museum of Natural History, Smithsonian Institution, Washington DC (USNM)
National Science Museum, Tokyo (NSMT)
Naturhistorisches Museum, Wien, Austria (NHMW)
South African Museum, Cape Town (SAMC)
South Australian Museum, Adelaide (SAMA)
Swedish Museum of Natural History (SMNH)
Universitets Zoologiske Museum, Copenhagen (UZMK)
Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN)

Specimens were temporarily mounted in a mixture of 90% glycerin/ 10% ethanol and drawn using a *camera lucida* on a Leica MZ 16 dissecting microscope and Leica DM LS2 compound microscope. Some specimens were temporarily stained with a dilute solution of chlorozale black dissolved in 70% ethanol. Body length is measured from the tip of the pseudorostral lobes to the posterior border of pleonite 6. Illustrations were completed using a Wacom tablet, Adobe Illustrator and Adobe Photoshop, after the techniques in Coleman (2003, 2009). Setal terminology follows Watling (1989).

Systematics

Lampropidae Sars, 1878

Platyaspidae Sars, 1899: 26.—Calman 1909:188.
Platysymphodidae Stebbing, 1912: 133,143.
Hemilampropidae Stebbing, 1912: 133,143.
Paralampropidae Stebbing, 1912: 133,143.
Pseudodiastylidae Stebbing, 1912: 133,143.
Chalarostylidae Stebbing, 1913: 55.
Mesolampropidae Given, 1964: 287.
Archaeocumatidae Băcescu, 1972: 241–245.

Type genus. *Lamprops* Sars, 1863.

Diagnosis. Antennule flagella well developed, accessory flagellum rarely minute. Antenna of 4 articles in female, flagellum with short articles in male. Mandible navicular or rarely truncate. Branchial apparatus with narrow gill plates. Female with natatory exopods on maxilliped 3 and pereopod 1, exopod may be natatory, rudimentary or absent on pereopod 2, exopod rudimentary or absent on pereopods 3–4. Male with natatory exopods on maxilliped 3–pereopod 4. Female without pleopods or rarely 1 or 2 pairs of rudimentary pleopods. Male with 0–3 pairs of pleopods, if present, with process on inner ramus. Male with or without penial lobes. Uropod endopod with 2 or 3 articles. Telson articulate, without pre-anal/ post-anal division, with 3 or more terminal setae.

Genera. *Alamprops* n. gen., *Platytyphlops* n. gen., *Aplatysympus* n. gen., *Archaeocuma* Băcescu, 1972, *Austrolamprops* n. gen., *Bathylamprops* Zimmer, 1908, *Brachylamprops* n. gen., *Chalarostylis* Norman, 1879, *Doieolamprops* n. gen., *Farragolamprops* n. gen., *Hemilamprops* Sars, 1883, *Lamprops* Sars, 1863, *Mesolamprops* Given, 1964, *Misceolamprops* Corbera, 2006, *Murilamprops* Reyss, 1978b, *Paralamprops* Sars, 1887, *Paraplatysympus* n. gen., *Phallolamprops* n. gen., *Phallolampropoides* n. gen., *Platysympus* Stebbing, 1912, *Pseudodiastylis* Calman, 1905, *Pseudolamprops* Gamô, 1989, *Quasiparalamprops* n. gen., *Reyssia* n. gen., *Stenotyphlops* Stebbing, 1912, *Watlingia* Gerken, 2010.

Remarks. At the time of the initial description of *Archaeocuma*, no other cumaceans were known with penial lobes in the male or pleopods in the female, so Băcescu (1972) considered these characters so unusual that despite the obvious affinities with the Lampropidae (flattened carapace, 3 terminal setae on the telson, large telson), a new family was proposed for the genus. However, species in the Lampropidae, Nannastacidae, and Leuconidae have now been described with penial lobes (*Campylaspenis*, *Chalarostylis*, *Eudorellopsis*, *Phallolamprops*, *Phallolampropoides*, *Phalloleucon*, *Watlingia*), and in this work two new lampropid genera are described with pleopods in the female (*Pseudoarchaeocuma*, *Doieolamprops*). Therefore, it is now clear that the presence of

penial lobes in the male and pleopods in the female are not unique characters (although the combination is unique), and *Archaeocuma* is a member of the Lampropidae.

The family diagnosis, in Jones (1963) includes “Telson present, of medium or large size, with 3 or more end spines, rarely with 1.” The genus *Pseudodiastylis* has three terminal setae, although the central seta is much larger and longer than the others. It seems that Jones interpreted this setal arrangement as a single terminal seta, whereas I interpret it as similar to other lampropids in which the terminal setae are unequal in size, and a central seta may be longer or shorter than the others.

Key to the genera of Lampropidae

(Some specimens may not be placed in the correct genus with certainty if adult males and/ or mouthparts are not known)

1.	Uropod endopod of 2 articles	2
-	Uropod endopod of 3 articles	5
2.	Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum	3
-	Antennule accessory flagellum much less than 0.5 length of main flagellum	4
3.	Female with 1 pair of small pleopods. Maxillule palp with 2 setae	<i>Doieolamprops</i> n. gen.
-	Female without pleopods. Maxillule palp with seta	<i>Watlingia</i>
4.	Antennule accessory flagellum minute, much shorter than 0.5 length of first article of main flagellum. Maxillule without palp	<i>Pseudodiastylis</i>
-	Antennule accessory flagellum longer than 0.5 length of first article of main flagellum. Maxillule palp with 2 setae	<i>Austrolamprops</i> n. gen.
5.	Carapace dorsoventrally flattened, with sharp marginal carina	6
-	Carapace not flattened, without marginal carina	15
6.	Pereopod 5 shorter than pereopod 4 basis	7
-	Pereopod 5 longer than pereopod 4 basis	12
7.	Female with 2 pairs of pleopods	<i>Pseudoarchaeocuma</i> n. gen.
-	Female without pleopods	8
8.	Maxillule without palp	<i>Paralamprops sensu</i> Sars
-	Maxillule with palp	9
9.	Maxillule palp without setae	<i>Quasiparalamprops</i> n. gen.
-	Maxillule palp with setae	10
10.	Maxillule with palp with 1 seta	<i>Farragolamprops</i> n. gen.
-	Maxillule with palp with 2 setae	11
11.	Female pereopod 2 with fully developed exopod	<i>Platytyphlops</i>
-	Female pereopod 2 with rudimentary or absent exopod	<i>Paraplatsympus</i> n. gen.
12.	Female pereopod 2 with rudimentary or absent exopod	13
-	Female pereopod 2 with fully developed exopod	14
13.	Maxillule with palp	<i>Aplatysympus</i> n. gen.
-	Maxillule without palp	<i>Platysympus</i>
14.	Male and female with 1 pair pleopods. Antennule flagella nearly equal	<i>Archaeocuma</i>
-	Male with 3 pairs pleopods, female without pleopods. Antennule accessory flagellum much shorter than main flagellum	<i>Misceolamprops</i>
15.	Pereopod 1 robust, with group of long, stout setae on dactylus	<i>Chalarostylis</i>
-	Pereopod without group of long setae on dactylus	16
16.	Pereopod 5 reduced to 2 articles	<i>Stenotyphlops</i>
-	Pereopod 5 of 5–6 articles, longer than basis of pereopod 4	17
17.	Pseudorostral lobes acute and elongate	<i>Bathylamprops</i>
-	Pseudorostral lobes blunt, not elongate	18
18.	Female without exopods on pereopods 3–4	<i>Brachylamprops</i> n. gen.
-	Female with rudimentary exopods on pereopods 3–4	19
19.	Uropod exopod article 1 more than 0.5 length of article 2	20
-	Uropod exopod article 1 0.2 length of article 2	21
20.	Male with penial lobes, no pleopods; pereopod 1 basis equal to all other articles together	21
-	Male without penial lobes	22
21.	Male with short, clasping antenna	<i>Phallolampropoides</i> n. gen.
-	Male with long antenna. Ventral elaboration on pleonites 1–2	<i>Phallolamprops</i> n. gen.
22.	Male with 3 pairs pleopods	<i>Hemilamprops</i>
-	Male with 2 pairs of pleopods	<i>Mesolamprops</i>
23.	Male with 3 pairs of pleopods	24

-	Male without pleopods	25
24.	Mandible truncate	<i>Pseudolamprops</i>
-	Mandible navicular	<i>Typolamprops</i>
25.	Male with short, clasping antenna	<i>Lamprops sensu</i>
-	Male with long antenna	<i>Alamprops</i> n. gen.

***Alamprops* n. gen.**

Lamprops.—Sars, 1863: 239 (in part).

Type species. *Lamprops augustinensis* Gerken, 2005.

Diagnosis. Carapace not dorsoventrally flattened, without marginal carina, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 basis subequal to rest of appendage. Pereopod 5 longer than basis of pereopod 4, with 6 articles. Telson large, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less, rarely longer than article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with long antenna, extending past pereon, penial lobes absent, without pleopods.

Species. *Alamprops affinis* (Lomakina, 1958) **n. comb.**, *A. augustinensis* (Gerken, 2005) **n. comb.**, *A. carinatus* (Hart, 1930) **n. comb.**, *A. comatus* (Zimmer, 1907), *A. donghaensis* (Kim & Kim, 2015) **n. comb.**, *A. flavus* (Harada, 1959) **n. comb.**, *A. kensleyi* (Haye & Gerken, 2005) **n. comb.**, *A. krashennikov* (Derzhavin, 1926) **n. comb.**, *A. lomakinae* (Tsareva & Vassilenko, 1993) **n. comb.**, *A. longispina* (Lomakina, 1958) **n. comb.**, *A. multifasciatus* (Zimmer, 1937) **n. comb.**, *A. obfuscatus* (Gladfelter, 1975) **n. comb.**, *A. profundus* (Reyss, 1978b) **n. comb.**, *A. pseudosarsi* (Tsareva & Vassilenko, 1993) **n. comb.**, *A. quadriplicatus* (Smith, 1879) **n. comb.**, *A. serratus* (Hart, 1930) **n. comb.**, *A. tenuis* (Tsareva & Vassilenko, 2006) **n. comb.**, *A. tomalesi* (Gladfelter, 1975) **n. comb.**, *A. triserratus* (Gladfelter, 1975) **n. comb.**

Etymology. *A* meaning “not”, in combination with *lamprops*, to indicate that these species have been removed from the genus *Lamprops sensu* Sars. Gender masculine.

Remarks. All the species initially included by Sars in the genus *Lamprops* Sars, 1863, had males with a short, clasping antenna (*Lamprops sensu* Sars). However, other authors added species with males with long antennae to the genus, without addressing the disparity or discussing the dilution of the generic definition. Where known, adult males of the species in the new genus have a long antenna, extending past the pereon, necessitating their removal from *Lamprops*. As the majority of cumacean species have a long antenna in the male, species previously included in *Lamprops sensu lato* in which the adult male is unknown are also included in the new genus. It is unfortunate that the females of *Alamprops* and *Lamprops* as restricted here are indistinguishable, except by reference to the individual species descriptions. However, to maintain consistency, and in line with Sars’ (1863) original conception of the genus *Lamprops*, it is necessary to remove the species from the genus that have a long, or non-clasping, antenna in the adult male.

Key to the species of *Alamprops*

1.	Telson with 3 terminal setae	<i>A. kensleyi</i>
-	Telson with 5 terminal setae	2
2.	Telson without lateral setae	3
-	Telson with lateral setae	11
3.	Carapace with lateral ridges	4
-	Carapace without ridges	6
4.	Carapace with 1 lateral ridge	<i>A. lomakinae</i>
-	Carapace with 2 or more lateral ridges	5
5.	Carapace with 3 lateral ridges	<i>A. pseudosarsi</i>
-	Carapace with 2 lateral ridges	<i>A. triserratus</i>
6.	Telson with equal terminal setae	7
-	Telson with unequal terminal setae	8
7.	Lateral margins of telson serrate	<i>A. comatus</i>

-	Lateral margins of telson entire.	<i>A. tomalesi</i>
8.	Outermost pair of terminal setae on telson longest.	9
-	Central seta of terminal seta on telson longest.	10
9.	Uropod peduncle with 5 or fewer medial setae.	<i>A. flavus</i>
-	Uropod peduncle with 8 or more medial setae.	<i>A. obfuscatus</i>
10.	Pereonite 2 concave dorsally. Uropod peduncle with 17 or more setae medially; endopod article 3 with medial setae.	<i>A. donghaensis</i>
-	Pereonite 2 convex dorsally. Uropod peduncle with 11 setae medially; endopod article 3 without medial setae.	<i>A. carinatus</i>
11.	Carapace without lateral ridges.	12
-	Carapace with lateral ridges.	14
12.	Telson terminal setae equal in length.	<i>A. affinis</i>
-	Telson terminal setae unequal in length.	13
13.	Uropod exopod article 1 equal to article 2.	<i>A. profundus</i>
-	Uropod exopod article 1 shorter than article 2.	<i>A. serratus</i>
14.	Carapace with 1 lateral ridge.	<i>A. tenuis</i>
-	Carapace with multiple lateral ridges.	15
15.	Outermost pair of terminal setae on telson longest.	<i>A. longispinus</i>
-	Central seta equal to or longer than outermost pair of terminal setae on telson.	16
16.	Uropod exopod article 1 subequal to article 2.	<i>A. krashennikovii</i>
-	Uropod exopod article 1 shorter than article 2.	17
17.	Carapace with more than 4 lateral ridges, including partial ridges.	<i>A. multifasciatus</i>
-	Carapace with 4 lateral ridges.	18
18.	Eyelobe extending to anterior border of pseudorostrum.	<i>A. quadriplicatus</i>
-	Eyelobe not extending to anterior border of pseudorostrum.	<i>A. augustinensis</i>

***Alamprops affinis* (Lomakina, 1958) n. comb.**

Lamprops affinis Lomakina, 1958a: 91–93, fig. 39.

Lamprops fuscata.—Calman, 1912: 629 (in part).

Lamprops aff. *fuscata*.—Lomakina, 1958b: 208.

Type material. Deposition unknown. Not seen.

Diagnosis. Carapace without lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson with 4 pairs of lateral setae, 5 terminal setae, outermost pair longest. Uropod peduncle with 4 medial setae; uropod exopod article 1 0.8 length of article 2. *Male* unknown.

Depth. 8–95 m.

Distribution. Boreal Pacific, Japan to Alaska.

Remarks. *Alamprops affinis* can be differentiated from the similar species *A. profundus* and *A. serratus* by having equal terminal setae on the telson; both *A. profundus* and *A. serratus* have terminal setae of unequal lengths, with the outermost pair longest. In *Lamprops*, the most similar species is *L. pumilio*. In *L. pumilio*, the pseudorostrum extends in front of the eyelobe more than the length of the eyelobe, and the five telson terminal setae increase in length from the outer pair to the central seta, while in *A. affinis* the pseudorostrum is very short, barely meeting in front of the eyelobe, and the telson terminal setae are all equal in length.

***Alamprops augustinensis* (Gerken, 2005) n. comb.**

Lamprops augustinensis Gerken, 2005: 683–690, figs 7–10.

Type material. Holotype: USNM 1075772, ovigerous female. Paratypes: USNM 1075774, ovigerous female; USNM 1075773, adult male. Augustine Island, 59°20.8'N, 153°32.8'W.

Diagnosis. Carapace with 4 lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson with 2–3 pairs of lateral setae, 5 terminal setae, central seta longest, outermost pair longer than inner pair. Uropod peduncle with 12 medial setae; uropod exopod article 1 0.6 length of article 2. *Male* without medial setae on uropod peduncles.

Depth. 0–1 m.

Distribution. Cook Inlet, Alaska, 59°20.8'N, 153°32.8'W.

Remarks. This species is similar to *Alamprops krashennikovi*, *A. longispina*, and *A. quadriplicatus*, as well as *Lamprops fasciatus*, in having ridges on the carapace. *Alamprops longispina* has the outermost pair of terminal setae on the telson very long, whereas in *A. augustinensis* the central seta is the longest. In *A. krashennikovi*, the terminal setae on the telson are similar in length to each other, and the first article of the antennular peduncle is equal to the second article, while in *A. augustinensis* the central and outermost pair of terminal setae on the telson are the longest, and the first article of the antennular peduncle is longer than the second. In *A. quadriplicatus* the telson is distinctly longer than the uropod peduncles, while in *A. augustinensis* the telson is shorter than the uropod peduncles. *Lamprops fasciatus* has three lateral ridges on the carapace, and one pair of lateral setae on the telson, while *A. augustinensis* has four lateral ridges on the carapace and two or more pairs of lateral setae on the telson.

***Alamprops carinatus* (Hart, 1930) n. comb.**

Lamprops carinatus Hart, 1930: 34–36, fig. 4A–E.

Type material. Lectotype: BCPM 978-119-1, female. Paralectotype: BCPM 978-119-2, male. Berry Point, Vancouver Island. Not seen.

Diagnosis. Carapace without lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 terminal setae, central seta longest, outer pair longer than inner pair. Uropod peduncle with 6 medial setae; uropod exopod article 1 1.5 length of article 2. *Male* eyelobe with lenses, antennal flagellum extending to posterior border of pleonite 6.

Depth. 25–120 m.

Distribution. Vancouver Island to Alaska.

Remarks. *Alamprops carinatus* can be differentiated from the similar *A. flavus* and *A. obfuscatus* by the terminal setae on the telson. In *A. carinatus*, the central seta is the longest, while in *A. flavus* and *A. obfuscatus* the outermost pair are longer than the central seta. *Alamprops carinatus* can be differentiated from the similar *Lamprops fuscatus* by the telson length relative to the uropod peduncles. In *A. carinatus* the telson is subequal to or slightly shorter than the uropod peduncles, while in *L. fuscatus* the telson is longer than the uropod peduncles.

***Alamprops comatus* (Zimmer, 1907) n. comb.**

Lamprops (?) *comatus* Zimmer, 1907: 373.

Type material. Holotype: ZMB 18 338, female, Antarctic, 65°15'S, 80°12'E.

Diagnosis. Carapace without lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 subequal terminal setae. Uropod peduncle with 3 medial setae; uropod exopod unknown. *Male* unknown.

Depth. 3423 m.

Distribution. Antarctic, 65°15'S, 80°12'E.

Remarks. *Alamprops comatus* is most similar to *A. tomalesi*, and can be differentiated by having the lateral margins of the telson serrate, whereas the lateral margins are entire in *A. tomalesi*. In addition, *A. comatus* is known from the deep Antarctic, while *A. tomalesi* is known from shallow waters off the coast of California.

***Alamprops donghaensis* (Kim & Kim, 2015) n. comb.**

Lamprops donghaensis Kim & Kim, 2015: 60–68, figs 1–5.

Type material. Holotype: NIBRIV 0000317121, adult male. Paratypes: DKU CUM 201501, 320 males. Geojin Port, South Korea, 38°26'44"N, 128°27'40"E. Not seen.

Diagnosis. Carapace without lateral ridges; eyelobe not extending to anterior border of pseudorostrum.

Pereonite 2 concave dorsally. Telson without lateral setae, 5 unequal terminal setae, central seta longest. Uropod peduncle with 17–18 medial setae; uropod exopod article 1 1.7 length of article 2. *Male* antennal flagellum extending past telson.

Depth. Not determined, described as “shallow water”, estimated 0–10 m, collected by light trap.

Distribution. Geojin Port, Gangneung Port, Oeongchi Port, and Cheongchoho, all Gangwon-do Korea, 37–38°N, 128°E.

Remarks. *Alamprops donghaensis* is most similar to *A. carinatus*, in having no ridges on the carapace, no lateral setae on the telson, and the central terminal seta on the telson being the longest. *Alamprops donghaensis* is unique in *Alamprops* and *Lamprops* in having pereonite 2 with a dorsal depression and a lateral circular depression. Kim & Kim (2015) provide an extensive discussion of discrimination of *A. donghaensis* from similar congeners within *Lamprops sensu lato* (*Alamprops* and *Lamprops*). It must be noted that the description of the species is entirely based on adult males, as all specimens were collected via light trap, and it is possible that females and juveniles will not possess the same distinguishing characteristics on pereonite 2.

Alamprops flavus (Harada, 1959) n. comb.

Lamprops flava Harada, 1959: 234–237, fig. 3.—Gamô, 1963, 15; 1967, 264.

Type material. Deposition unknown. Shimoda Bay, Japan. Not seen.

Diagnosis. Carapace without lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 terminal setae, outermost pair longest, inner pair shortest. Uropod peduncle with medial setae; uropod exopod article 1 1.4 length of article 2. *Male* antennal flagellum extending to midline of pleonite 5.

Depth. Not determined, estimated 0–10 m (modern depth, www.ports.com), collected by light trap.

Distribution. Shimoda Bay, Izu Peninsula, Japan, 34°40.2'N, 138°57'E (location, www.ports.com)

Remarks. *Alamprops flavus* is most similar to *A. carinatus* and *A. obfuscatus*, but can be differentiated by the terminal setae on the telson and the setae on the uropod peduncle. In *A. carinatus*, the central terminal seta is the longest, while in *A. flavus* the outermost pair of terminal setae on the telson are the longest. In *A. obfuscatus* the uropod peduncle has 8 or more medial setae, while in *A. flavus* there are only 5 or fewer setae medially on the uropod peduncle. In addition, *A. flavus* is only known from Japan.

Alamprops kensleyi (Haye & Gerken, 2005) n. comb.

Lamprops kensleyi Haye & Gerken, 2005: 30–36, figs 1–3.

Type material. Holotype: MNHNCL CUM–11536, subadult male. Paratypes: MNHNCL CUM–11537, 2 mancae, 1 ovigerous female, 1 subadult female. Ancud, Chiloé, Chile, 41°49.6'S, 73°50.7'W.

Diagnosis. Carapace without lateral ridges; eyelobe with lenses, not extending to anterior border of pseudorostrum. Telson with 4 pairs of lateral setae, 3 equal terminal setae. Uropod peduncle with 4 medial setae; uropod exopod article 1 0.6 length of article 2. *Adult male* unknown.

Depth. 14–19 m.

Distribution. Ancud, Chiloé, Chile, 41°49.6'S, 73°50.7'W.

Remarks. Although the most mature male in the material collected was a subadult male, it was the pre-adult molt, and the antenna extended to the end of carapace, suggesting a long antennal flagellum in the final molt. The only other species in either *Alamprops* or *Lamprops* with three terminal setae on the telson is *L. beringi*, which has a single strong lateral ridge on the carapace, unlike *A. kensleyi* which is without lateral ridges. The only other *Alamprops* from this region is *A. comatus* from the Antarctic, which also has a smooth carapace, but it has five terminal setae on the telson and was found at a depth of 3423 m.

***Alamprops krasheninnikovi* (Derzhavin, 1926) n. comb.**

Lamprops krasheninnikovi Derzhavin, 1926: 179, pl. 3 fig. 6, pl. 6.

Lamprops quadriplicata krasheninnikovi.—Lomakina 1955: 137; 1958: 84–85.—Lie 1968: 297, 553.

Type material. Deposition unknown. Petropavlovsk Bay, Kamschatka Peninsula. Not seen.

Diagnosis. Carapace with 4 lateral ridges; eyelobe with lenses, not extending to anterior border of pseudorostrum. Telson with 2 pairs of lateral setae, 5 terminal setae, central seta longest, outermost pair longer than inner pair. Uropod peduncle with 9 medial setae; uropod exopod article 1 1.0 length of article 2. *Male* with antennal flagellum long.

Depth. 25–30 m.

Distribution. Petropavlovsk Bay, Kamschatka Peninsula; Okhotsk Sea; Bering Sea.

Remarks. This species was originally described by Derzhavin (1926) from Kamchatka, and placed as a subspecies of *A. quadriplicatus* by Lomakina (1955). The current understanding of *A. quadriplicatus* is that the species is restricted to the northwestern Atlantic, on the American and Canadian Atlantic coasts. Thus, *A. krasheninnikovi* is returned to the original status of a separate species. A record of *Lamprops krasheninnikovi* by Zimmer (1943) from Vancouver is likely either a new species or a representative of *A. augustinensis* (Gerken, 2005), but the specimen was not seen. Likewise, a specimen identified by Zimmer as *krashenninikovi* from Corona del Mar, California (USNM 92076) is not *krashenninikovi*. *Alamprops krasheninnikovi* can be distinguished from *A. longispina* by the outermost pair of terminal setae on the telson being equal to the central seta; in *A. longispina* the outer most pair is twice as long or more than the central seta. *Alamprops krasheninnikovi* can be distinguished from *A. quadriplicatus* by the proportions of pereopods 1 and 2. In *A. krasheninnikovi* the dactylus of pereopod 1 is 0.8 the length of the propodus, and the dactylus of pereopod 2 is 0.6 the length of the propodus; in *A. quadriplicatus* the dactylus of pereopod 1 is 0.9 the length of the propodus, and the dactylus of pereopod 2 is equal to the propodus. *Alamprops krasheninnikovi* can be distinguished from *A. augustinensis* by the antennal peduncle, in *A. augustinensis* the first peduncle article is longer than the second, while in *A. krasheninnikovi* the first peduncle article is equal to the second article.

***Alamprops lomakinae* (Tsareva & Vassilenko, 1993) n. comb.**

Lamprops lomakinae Tsareva & Vassilenko, 1993: 13–17, figs 4–5.

Type material. Holotype: ZIN N I/85301, ovigerous female. Peter the Great Bay. Not seen.

Diagnosis. Carapace with 2 lateral ridges; eyelobe without lenses, not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 terminal setae, central seta longest, outermost pair shorter than inner pair. Uropod peduncle with 4 medial setae; uropod exopod article 1 1.0 length of article 2. *Male* unknown.

Depth. 20 m.

Distribution. Peter the Great Bay; Sea of Japan, 42°29'N, 130°51'E.

Remarks. The species has a unique combination of one ridge on the carapace and the telson without lateral setae. The only other species that has a single ridge on the carapace, *A. tenuis*, has four pairs of lateral setae on the telson.

***Alamprops longispina* (Lomakina, 1958) n. comb.**

Lamprops quadriplicatus longispina Lomakina, 1958a: 85, fig. 32.—Gamô, 1965: 196–203.

Type material. None designated. Siauahu Bay.

Diagnosis. Carapace with 4 lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson with 4–5 pairs of lateral setae, 5 terminal setae, outermost pair twice length of central seta, inner pair shorter than central seta. Uropod peduncle with 10 medial setae; uropod exopod article 1 1.3 length of article 2. *Male* with antennal flagellum extending to posterior border of pereonite 3.

Depth. 0–21 m.

Distribution. Siauahu Bay; Peter the Great Bay; Hokkaido, Japan.

Remarks. This species was originally described by Lomakina (1958a) as a subspecies of *A. quadriplicatus*. The taxon is hereby elevated to the rank of species, as the long telson terminal setae serve to distinguish it from all other *Alamprops* and *Lamprops* with ridges on the carapace. The specimens described by Gamô (1965) were not seen, and it is possible that they represent yet another species of *Alamprops* with multiple ridges on the carapace. This species can be differentiated from *A. augustinensis*, *A. krasheninnikovi* and *A. quadriplicatus* by the number of lateral setae on the telson; in the other species there are no more than three pairs of lateral setae, while in *A. longispina* there are four or more pairs of lateral setae.

***Alamprops multifasciatus* (Zimmer, 1937) n. comb.**

Lamprops multifasciatus Zimmer, 1937: 39–42, figs 3–4.—Lomakina 1955: 136; 1958a: 88, fig. 35; 1958b: 209.

Type material. Deposition unknown. North Sea of Japan. Not seen.

Diagnosis. Carapace with 6 or more lateral ridges; eyelobe with lenses, not extending to anterior border of pseudorostrum. Telson with 2 pairs of lateral setae, 5 terminal setae, central seta equal to outermost pair, inner pair short. Uropod peduncle with 7 medial setae; uropod exopod article 1 0.8 length of article 2. *Male* with long antennal flagellum.

Depth. 14–92 m.

Distribution. Sea of Japan, 51°36'N, 141°08'E; Okhotsk Sea.

Remarks. This species is similar to the *Alamprops augustinensis*, *A. krasheninnikovi*, *A. longispina*, *A. quadriplicatus* group, but can be differentiated by the greater number of ridges on the carapace. In *A. multifasciatus* there are six ridges, although some are partial ridges, while in the other species there are no more than four entire ridges, and one of the four ridges may be difficult to discern. The only species in *Lamprops* with multiple ridges is *L. fasciatus* with three ridges.

***Alamprops obfuscatus* (Gladfelter, 1975) n. comb.**

Diastylis obfuscata Gladfelter, 1975: 249, fig. 5

Lamprops obfuscatus.—Băcescu, 1988: 19.

Type material. Holotype: USNM 143689, ovigerous female, Dillon Beach.

Diagnosis. Carapace without lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 terminal setae, central seta and outermost pair equal, inner pair short. Uropod peduncle with 4 medial setae; uropod exopod article 1 1.1 length of article 2. *Male* unknown.

Depth. 16 m.

Distribution. Dillon Beach, California, 38°N, 123°W.

Remarks. The most similar species to *Alamprops obfuscatus* are *A. carinatus* and *A. flavus*. In *A. obfuscatus* the outermost pair of setae on the telson are longer than the central seta, and the uropod peduncle has at least 8 medial setae. In contrast, in *A. carinatus* the central terminal seta on the telson is the longest, and in *A. flavus* the uropod peduncle has five or fewer medial setae. Within *Lamprops*, the most similar species is *L. korroensis*, which can be differentiated by the telson being half the length of the uropod peduncles, while in *A. obfuscatus* the telson is shorter than the uropod peduncles but much longer than half the length of the peduncles.

***Alamprops profundus* (Reyss, 1978b) n. comb.**

Lamprops profundus Reyss, 1978b: 72–74, fig. 1.

Type material. Deposition unknown. Canary Islands. Not seen.

Diagnosis. Carapace without lateral ridges; eyelobe not extending to anterior border of pseudorostrum, pseudorostrum long. Telson with 3 pairs of lateral setae, 5 terminal setae, outermost pair long. Uropod peduncle with 5 medial setae; uropod exopod article 1 1.0 length of article 2. *Male* unknown.

Depth. 193 m.

Distribution. Canary Islands, 27°45'N, 14°13'W.

Remarks. *Alamprops profundus* can easily be differentiated from all other *Alamprops* and *Lamprops* by the carapace. The pseudorostrum in *A. profundus* is long and distinctly dorsally inclined, well distinguished from the rest of the carapace. In all other *Alamprops* and *Lamprops*, the pseudorostrum is in line with the dorsal margin of the carapace and is relatively short, not long and distinct from the rest of the carapace.

***Alamprops pseudosarsi* (Tsareva & Vassilenko, 1993) n. comb.**

Lamprops pseudosarsi Tsareva & Vassilenko, 1993: 13–17, figs 1–2.

Type material. Holotype: ZIN N 1/87001, ovigerous female. Paratypes: ZIN N 1/87002, 3 females. Sea of Japan, Peter the Great Bay. Not seen.

Diagnosis. Carapace with 3 lateral ridges; eyelobe with lenses, not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 terminal setae, central seta longest, outer pair longer than inner pair. Uropod peduncle without medial setae; uropod exopod article 1 1.1 length of article 2. *Male* unknown

Depth. 10 m.

Distribution. Peter the Great Bay, Sea of Japan, 42°38'N, 131°12'E.

Remarks. The generic placement of *Alamprops pseudosarsi* may be incorrect. The uropod exopod article 1 is 1.5 times the length of article 2, which suggests placement in *Hemilamprops*, not *Alamprops* and *Lamprops*, in which the uropod exopod article 1 is otherwise 0.2 or less the length of article 2. However, the pereopod 1 basis is distinctly longer than the other articles together, which agrees with other species of *Alamprops* and *Lamprops*, rather than *Hemilamprops* in which the basis of pereopod 1 is shorter than the rest of the articles combined. The description of the male is necessary to be certain of the correct generic placement. In the absence of the male, the species is retained in the group (*Alamprops/Lamprops*) it was placed in by Tsareva & Vassilenko (1993).

Within the genus *Alamprops*, *A. pseudosarsi* is unique in having 3 lateral ridges on the carapace. The only similar species with 3 lateral ridges is *Lamprops fasciatus*, which has a pair of long lateral setae on the telson, and in which the pseudorostrum meets just in front of the eyelobe, unlike *A. pseudosarsi* in which the pseudorostrum extends well past the eyelobe.

***Alamprops quadriplicatus* (Smith, 1879) n. comb.**

Lamprops quadriplicatus Smith, 1879: 118–120.

Type material. Syntypes: in part, in USNM: 10499, ovigerous female; 34874, subadult female; 34884, 2 subadult females; 34885, subadult male; 36639, subadult male; 44132, preparatory female; 44133, preparatory male. Gloucester Harbor, Grand Banks, Cape Cod Bay, Casco Bay.

Diagnosis. Carapace with 4 lateral ridges; eyelobe not extending to anterior border of pseudorostrum. Telson with 2 pairs of lateral setae, 5 terminal setae, central seta and outermost pair subequal. Uropod peduncle with 7 medial setae; uropod exopod article 1 0.9 length of article 2. *Male* with long antennal flagellum.

Depth. 4–104 m.

Distribution. Western boreal Atlantic.

Remarks. This species has been problematic. The original description by Smith is from the western North Atlantic, but several subspecies have been ascribed to this species from the North Pacific, specifically *krasheninnikovi* from the boreal North Pacific, *longispina* from Peter the Great Bay and Hokkaido, Japan, as well as *quadriplicatus* from the Pacific coast of Canada (Derzhavin 1926; Hart 1930; Zimmer 1943). Given the limited dispersal capabilities of cumaceans, and the genetic differentiation that has been described between very close populations in South Africa (Teske 2006), it is unlikely that all of these records represent a single species. As the

subspecies are morphologically distinguishable from *quadriplicatus*, they were returned (*krashennikovii*) or elevated (*longispinus*) to the rank of species. Based on color differences, Zimmer (1980) suggested that Hart's "*L. quadriplicatus*" is unlikely to be the same species found on the western North Atlantic coasts of Canada and the United States. It is possible that Hart's *quadriplicatus* is what was described as *A. augustinensis* (Gerken, 2005).

***Alamprops serratus* (Hart, 1930) n. comb.**

Lamprops serratus Hart, 1930: 36, fig. 4.

Lamprops serrata.—Lomakina, 1958a: 93–94, fig. 40.

Type material. Holotype: BCPM 978. Not seen

Diagnosis. Carapace without lateral ridges; eyelobe with lenses, not extending to anterior border of pseudorostrum. Telson with 3 pairs of lateral setae, 5 terminal setae, outermost pair longest, inner pair and central seta equal. Uropod peduncle with 4 medial setae; uropod exopod article 1 0.9 length of article 2. *Male* unknown.

Depth. 20–95 m.

Distribution. Departure Bay, Vancouver Island, Canada, 49°12.6'N, 123°57.6'E (estimated from Google Earth); Kamschatka Peninsula.

Remarks. *Alamprops serratus* is unique in *Alamprops* and *Lamprops* in having the anterolateral corner of the carapace strongly serrate rather than entire. *Alamprops serratus* is most similar to *A. affinis*, but in *A. affinis* the telson terminal setae are equal in length, while in *A. serratus* the outermost pair are longer than the medial three setae.

***Alamprops tenuis* (Tsareva & Vassilenko, 2006) n. comb.**

Lamprops tenuis Tsareva & Vassilenko, 2006: 42, figs 1–2.

Type material. Holotype: ZIN-1/88378, preparatory female. Paratypes: ZIN-2/88379, 2 females, 1 juvenile; ZIN-3/88411, juvenile; ZIN-4/88412, 2 juveniles; ZIN-5/88413, juvenile; ZIN-6/883414, juvenile; ZIN-7/88415, female. Peter the Great Bay, Sea of Japan. Not seen.

Diagnosis. Carapace with 1 lateral ridge; eyelobe without lenses, not extending to anterior border of pseudorostrum. Telson with 4 lateral setae, 5 terminal setae, central seta stout, outer pair longest. Uropod peduncle without medial setae; uropod exopod article 1 0.6 length of article 2. *Male* unknown.

Depth. 3–17 m.

Distribution Peter the Great Bay, Sea of Japan.

Remarks. *Alamprops tenuis* has a unique combination of characters in the genus of a single ridge on the carapace and four pairs of lateral setae on the telson; *A. lomakinae* also has a single ridge on the carapace, but has no lateral setae on the telson. The only similar species in *Lamprops* is *L. beringi*, which has a similar carapace with strong lateral ridge. However, in *L. beringi* there are only three setae terminally on the telson, whereas in *A. tenuis* there are five terminal setae on the telson.

***Alamprops tomalesi* (Gladfelter, 1975) n. comb.**

Lamprops tomalesi Gladfelter, 1975: 244–246, fig. 2.

Type material. Holotype: USNM 143686, ovigerous female. Dillon Beach.

Diagnosis. Carapace without lateral ridges; eyelobe without lenses, not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 terminal setae, central seta longest, outer pair shortest. Uropod peduncle with 9 medial setae; uropod exopod article 1 2.0 length of article 2. *Male* unknown.

Depth. 8 m.

Distribution. Dillon Beach, California, 38°N, 123°W.

Remarks. The most similar species is *A. comatus*; however, in *A. comatus* the lateral margins of the telson are serrate, while in *A. triserratus* the lateral margins of the telson are entire. In addition, *A. triserratus* is known from shallow waters off California, while *A. comatus* is known from 3423 m in the Antarctic. The most similar *Lamprops* is *L. pumilio*, in which the telson is 0.9 time the length of uropod peduncles, and uropod exopod article 1 is 1.1 times the length of article 2. In contrast, in *A. tomalesi* the telson is 0.7 times the length of the uropod peduncles, and uropod exopod article 1 is twice the length of article 2.

***Alamprops triserratus* (Gladfelter, 1975) n. comb.**

Diastylis triserrata Gladfelter, 1975: 249–250, fig. 5.

Lamprops triserratus.—Băcescu, 1988: 21.

Type material. Holotype: USNM 143690, ovigerous female. Dillon Beach.

Diagnosis. Carapace with 3 lateral ridges, most dorsal ridge partial; eyelobe without lenses, not extending to anterior border of pseudorostrum. Telson without lateral setae, 5 terminal setae, central seta more than twice length of outer pair, inner pair shortest. Uropod peduncle without medial setae; uropod exopod article 1 1.2 length of article 2. *Male* unknown.

Depth. 10.5–16 m.

Distribution. Dillon Beach, California, 38°N, 123°W.

Remarks. *Alamprops triserratus* is unique within the *Alamprops* and *Lamprops* in having two lateral ridges on the carapace.

***Aplatysympus* n. gen.**

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, pointed. Antennule flagella short, accessory flagellum as long as main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 longer than basis of pereopod 4. Telson moderate, about 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with rudimentary exopod on pereopod 2, no exopods on pereopods 3–4, without pleopods. *Male* unknown.

Etymology. A combination of the prefix “A” meaning “not”, and the generic name *Platysympus*, in reference to the great similarity of the new genus to *Platysympus*. Gender masculine.

Type species. *Aplatysympus neozealanicus* n. sp.

Remarks. *Aplatysympus* resembles *Platysympus* in the rudimentary exopod on pereopod 2 and lack of exopods on pereopods 3–4 in the female. However, *Platysympus* lacks a maxillule palp, present in the new genus. This genus also resembles *Doieolamprops* in the rudimentary exopod on pereopod 2. However, *Doieolamprops* has 2 articles in the uropod endopod and a pair of pleopods in the female, while *Aplatysympus* has 3 articles in the uropod endopod and no pleopods in the female.

***Aplatysympus neozealanicus* n. sp.**

(Figs 1–2)

Type material. Holotype: subadult female, NIWA 45706, 42.99°S, 178.99°E, 530 m, Chatham Rise, 24 April 2007. Paratype: subadult female NIWA 45707, 42.78°S, 176.28°W, 1026 m, Chatham Rise, 10 April 2007.

Description. Holotype subadult female NIWA 45706, paratype subadult female NIWA 45707. Subadult female, 4.3 mm. Carapace somewhat flattened, with marginal carina, 3 pairs of large dorsal tubercles, 1 pair large posterior dorsolateral tubercles, lateral carina in center half of carapace, sulcus between lateral ridge and marginal carina; pseudorostral lobes 0.3 carapace length, ventrally directed; eyelobe 0.05, no lenses; carapace 2.2 length of pereonites together (Fig. 1A–C).

Antennule peduncle article 1 length equal to articles 2 and 3 combined, unarmed, distal corner produced as 3 teeth; article 2 0.6 article 1 length, with 3 simple setae; article 3 0.8 article 2 length, with 2 simple setae; main

flagellum of 3 articles, 1.8 length of article 3, with 3 simple setae and 2 aesthetascs; accessory flagellum of 3 articles, equal to main flagellum length, with 5 simple setae (Fig. 1D).

Antenna of 4 articles, articles 1–3 with pappose seta, article 4 with 3 simple setae terminally (Fig. 1E).

Mandible navicular, with 12 micro serrate setae medially, *lacinia mobilis* with 3 cusps (Fig. 1F).

Maxillule with 2 endites; outer endite with 12 simple and 1 pappose setae; inner endite with 1 simple, 3 pappose and 1 dentate setae; palp with 2 setae (Fig. 1G).

Maxilla with 3 endites; broad endite distal margin with pappose, simple and micro serrate setae, medial row of 29 setae; medial narrow endite with 4 micro serrate setae terminally; distal narrow endite with 5 micro serrate setae terminally; both narrow endites extending past distal margin of broad endite (Fig. 1H).

Maxilliped 1 basis produced medially as broad lobe, medial margin with row of 8 pappose setae, distal margin with 3 simple, 2 pappose, 1 stout micro serrate and 2 hook setae; ischium absent; merus with pappose seta laterally, lateral margin with 1 tooth; carpus 1.4 merus length, with 11 pappose and 7 comb setae medially, plumose seta laterally, lateral margin strongly serrate; propodus 0.7 carpus length, with 2 simple and 4 pappose setae medially, 1 simple and 1 pappose setae laterally; dactylus 0.5 propodus length, with 3 simple setae (Fig. 1I).

Maxilliped 2 basis longer than all other articles together, with 1 pappose and 1 plumose setae; ischium unarmed; merus 11.0 ischium length, with pappose seta and tooth medially, plumose seta and tooth laterally, plumose seta mid–article; carpus 1.5 merus length, with 5 plumose setae medially; propodus equal to carpus length, with 1 simple and 4 plumose setae medially, plumose seta laterally; dactylus 0.4 propodus length, with 3 simple setae terminally (Fig. 1J).

Maxilliped 3 basis 1.3 all other articles together, with 1 pappose and 2 plumose setae; ischium 0.07 basis length, unarmed; merus 1.5 ischium length, with pappose seta medially, plumose seta laterally; carpus 3.7 merus length, with 6 plumose setae medially; propodus 0.5 carpus length, with 5 plumose setae medially, 2 simple setae laterally; dactylus 0.3 propodus length, with 2 simple setae terminally; exopod 0.8 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 2A).

Pereopod 1 broken, not illustrated.

Pereopod 2 basis 0.9 all other articles together, with 2 plumose setae; ischium 0.04 basis length, unarmed; merus 2.7 ischium length, with 2 simple setae; carpus 4.8 merus length, with 3 micro serrate setae with single subterminal setule; propodus 0.2 carpus length, with 2 simple setae and micro serrate seta with single subterminal setule; dactylus 3.1 propodus length, with simple seta and 4 micro serrate setae with single subterminal setule, simple seta terminally; exopod rudimentary, 0.1 basis length, of 2 articles, with 3 simple setae (Fig. 2B).

Pereopod 3 basis 1.7 all other articles together, with 3 simple setae; ischium 0.05 basis length, unarmed; merus 2.3 ischium length, with simple seta; carpus 1.8 merus length, with simple seta; propodus 0.8 carpus length, with annulate seta; dactylus 0.3 propodus length, with 2 simple setae terminally; exopod absent (Fig. 2C).

Pereopod 4 basis 0.9 all other articles together, with simple seta; ischium 0.08 basis length, unarmed; merus 3.0 ischium length, with simple seta; carpus 2.0 merus length, with simple seta; propodus 0.5 carpus length, with annulate seta; dactylus 0.3 propodus length, with 2 simple setae terminally; exopod absent (Fig. 2D).

Pereopod 5 basis 0.5 all other articles together, with 2 simple setae; ischium 0.2 basis length, with simple seta; merus 2.5 ischium length, with simple seta; carpus 1.8 merus length, with 2 simple setae; propodus 0.5 carpus length, with annulate seta; dactylus 0.8 propodus length, with 2 simple setae terminally (Fig. 2E).

Telson 2.4 length of pleonite 6, without lateral setae, distal half of margins strongly serrate, 3 short terminal setae (Fig. 2F).

Uropod peduncles 3.9 pleonite 6 length, 1.6 telson length, with simple seta with single subterminal setule medially. Uropod endopod of 3 articles, 0.9 peduncle length; article 1 1.3 articles 2 and 3 together, with 3 setae with single subterminal setule medially, medial margin serrate; article 2 0.4 article 1 length, with seta with single subterminal setule medially; article 3 0.9 article 2 length, with seta with single subterminal setule medially, terminal seta with single subterminal setule 0.5 length of article 3. Uropod exopod 0.8 length of endopod; article 1 0.2 article 2 length, unarmed; article 2 4.5 article 1 length, with 2 simple setae medially, simple seta laterally, terminal seta broken (Fig. 2F).

Etymology. The species is named *neozelandicus* in reference to the place of collection, the waters of New Zealand.

Depth. 520–1026 m.

Distribution. Chatham Rise, New Zealand, 43°S, 179–182°E.

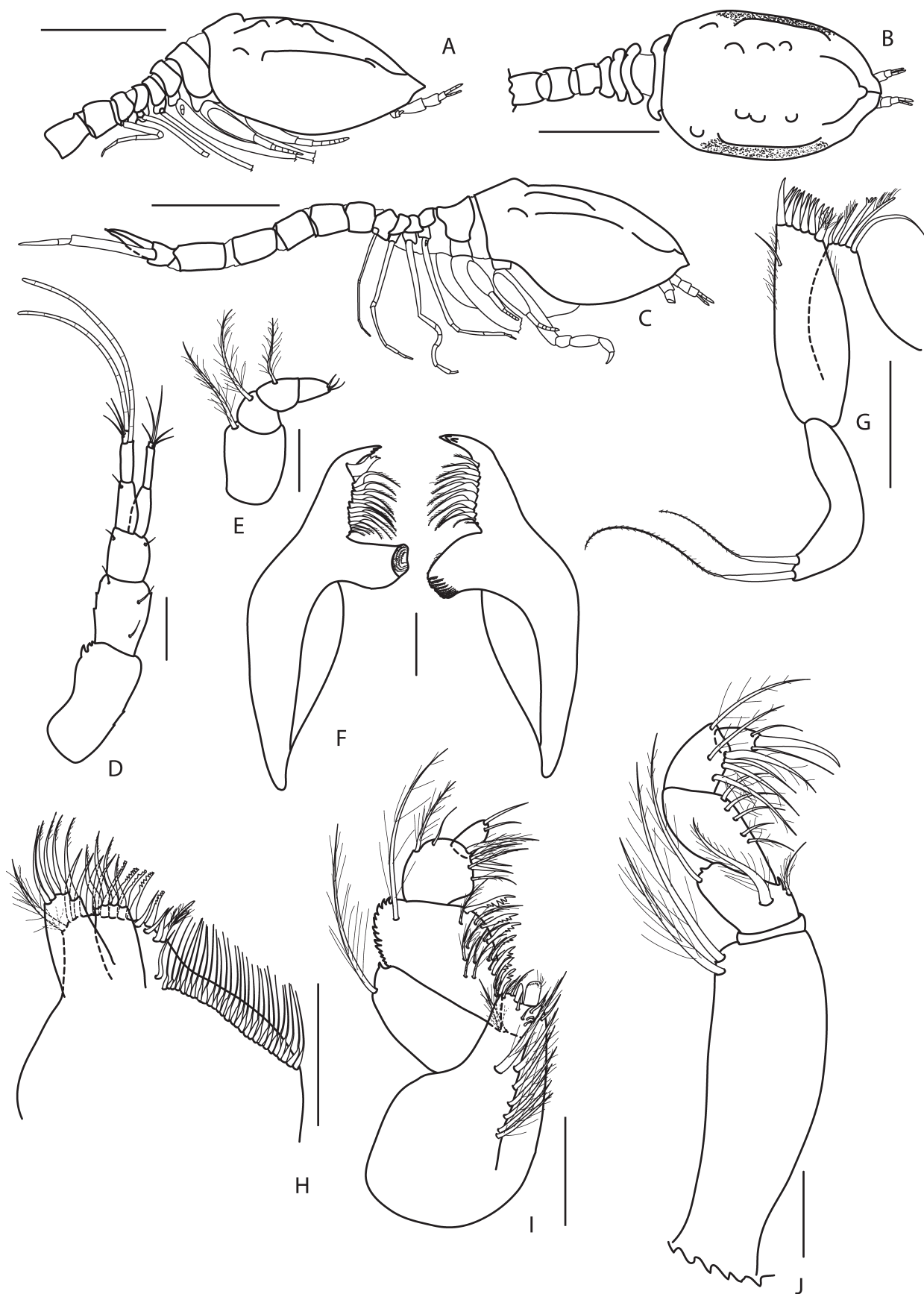


FIGURE 1. *Aplatysympus neozealanicus* n. sp. Holotype female NIWA 45706, A, side view; B, dorsal view. Paratype subadult female NIWA 45707, C, side view; D, antennule; E, antenna; F, mandibles; G, maxillule; H, maxilla; I, maxilliped 1; J, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

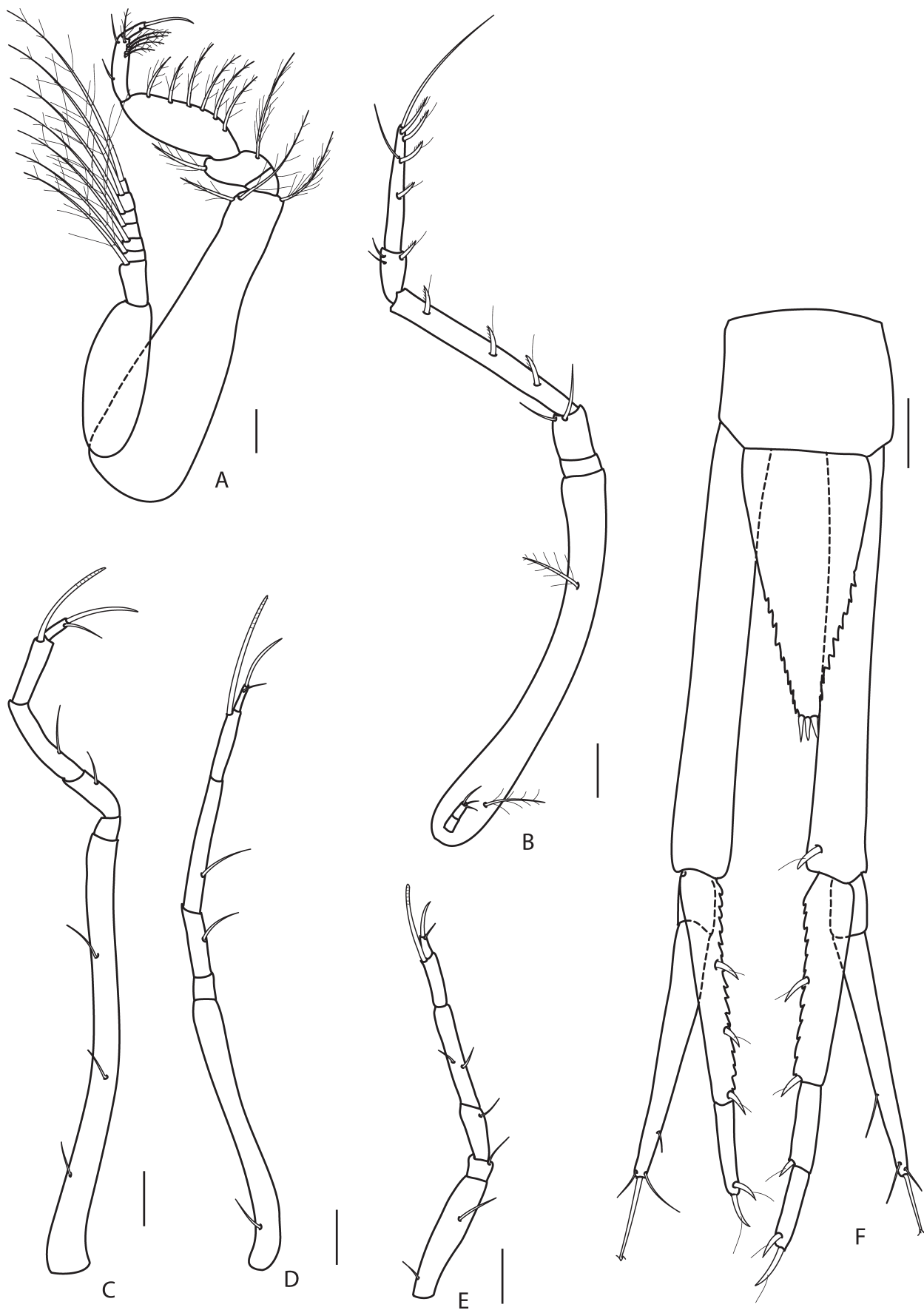


FIGURE 2. *Aplatysympus neozelanicus* n. sp. Paratype female NIWA 45707, A, maxilliped 3; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

Remarks. *Aplatysympus neozealanicus* is somewhat similar to *Watlingia chathamensis* in carapace morphology, both possessing three large blunt dorsal tubercles. However, in *Aplatysympus neozealanicus* the carapace has additional sculpturing with a ridge ventral of the tubercles, and a sulcus between the marginal carina and the ridge ventral of the tubercles. Also, *Aplatysympus* has three articles in the uropod endopod, while *Watlingia* has two articles in the uropod endopod.

***Archaeocuma* Băcescu, 1972**

Archaeocuma Băcescu, 1972: 241.

Type species. *Archaeocuma peruana* Băcescu, 1972, by monotypy.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 shorter than pereopod 4 basis. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, with 1 pair of pleopods. *Male* with short antenna, not extending to end of pereon, first 3 articles of flagellum each with stout single seta, penial lobes present, with 1 pair of pleopods.

Species. *Archaeocuma peruana* Băcescu, 1972.

Remarks. At the time of the initial description, no other cumaceans were known with penial lobes in the male or pleopods in the female, so Băcescu (1972) considered these characters so significant that despite the obvious affinities with the Lampropidae (flattened carapace, 3 terminal setae on the telson, large telson), a new family was necessary. However, species in the Lampropidae, Nannastacidae, and Leuconidae have now been described with penial lobes (*Campylaspenis*, *Chalarostlyis*, *Eudorellopsis*, *Phallolamprops*, *Phallolampropoides*, *Phalloleucon*, *Watlingia*), and in this work two new lampropid genera are described with pleopods in the female (*Pseudoarchaeocuma*, *Doieolamprops*). Therefore, it is now clear that the presence of penial lobes in the male and pleopods in the female are not unique characters, although the combination is unique.

***Archaeocuma peruana* Băcescu, 1972**

Archaeocuma peruana Băcescu, 1972: 241–245, figs 1A–G, 2A–H, phot. A, B.

Archaeocuma peruviana.—Băcescu, 1972: 241 (Lapsus calami).

Type material. Holotype: GAM 200, male. Allotype: GAM 201, female. Paratypes: GAM 202, male and female. Peru-Chile Trench, 8°21'S, 81°25'W.

Other material. USNM 38984, 13°33'S, 77°26'W, 3160 m; 1 subadult female, 2 adult males, MNHN CU-893, *Vema*.

Diagnosis. Carapace marginal carina crenellated. Telson with 3 terminal setae, 3 pairs of lateral setae.

Depth. 1016–3300 m.

Distribution. Peru-Chile Trench, 8°–13°S, 77–81°25'W.

Remarks. The type material is decalcified, and in poor condition. The material from the USNM is in somewhat better shape, with some variability in the development of the pleopods in the female, but the pleopods were present on all female specimens.

***Austrolamprops* n. gen.**

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella unequal, accessory flagellum shorter than article 1 of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson long, more than length of 0.7 length of uropod peduncles, with distinct post-anal narrowing. Uropod endopod of 2

articles. Uropod exopod article 1 at least 0.5 length article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with 3 pairs of pleopods.

Etymology. The combination of the generic name *Lamprops*, and *austro* meaning south, in reference to the distribution of this genus in the southern hemisphere. Gender masculine.

Type species. *Austrolamprops sulcatus*

Remarks. This genus is distinguished by the combination of the uropod endopod with two articles, and maxillule palp with two setae. In *Pseudodiasylis*, which also has a two article uropod endopod, the maxillule has no palp. *Watlingia* also has a two article uropod endopod; however, in this genus the maxillule palp has a single seta.

***Austrolamprops sulcatus* n. sp.**

(Figs 3–4)

Type material. Holotype ovigerous female, NMV J62284; paratype subadult female, dissected, NMV J62285; paratype subadult male, dissected, NMV J62286, 38°29'20"–38°26'49"S, 149°19'59"–149°20'47"E, 1750–1840 m, Victoria, Australia.

Other material. 12 individuals, NMV J54383, 38°29'20"–38°26'49"S, 149°19'59"–149°20'47"E, 1750–1840 m.

Description. Holotype ovigerous female, NMV J62284, 5.9 mm.

Carapace with paired posterior dorsolateral expansion, heavy carina beginning at anterolateral corner and sweeping to mid-dorsal point carapace posterior margin, second incomplete ridge dorsal to sweeping ridge, both ridges bounding sulcus, anterolateral corner and anterior portion of sweeping ridge serrate, antennal notch present; pseudorostral lobes 0.3 carapace length, convex in dorsal view; eyelobe 0.05 carapace length; carapace 2.5 length of pereonites together (Fig. 3A, B).

Paratype subadult female, NMV J62285.

Antennule peduncle article 1 with simple seta, margin serrate; article 2 0.7 article 1 length, with 3 simple and 1 pedunculate setae; article 3 0.7 article 2 length, unarmed, margin serrate; main flagellum of 4 articles, 2.8 article 3 length, with 2 simple setae and 2 aesthetascs; accessory flagellum of 2 articles, 0.7 main flagellum article 1 length, with 4 simple setae (Fig. 3C).

Antenna of 4 articles, article 1 with pappose seta, article 2 with pappose seta, article 3 unarmed, article 4 with 4 simple setae terminally (Fig. 3D).

Mandible navicular, with 2 simple and 6 microserrate setae medially (Fig. 3E).

Maxillule with 2 endites; outer endite with 1 pappose and 10 simple setae; inner endite with 3 simple, 1 pappose and 1 dentate setae; palp with 2 setae (Fig. 3F).

Maxilla with 3 endites; broad endite distal margin with pappose and simple setae, medial row of 20 setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 5 microserrate setae terminally; both narrow endites extending to distal margin of broad endite (Fig. 3G).

Maxilliped 1 basis produced medially as broad lobe, with 5 simple and 2 stout microserrate setae distally, 2 hook setae; ischium absent; merus with plumose seta laterally, lateral margin with tooth; carpus 2.2 merus length, with 8 simple and 5 comb setae; propodus 0.2 carpus length, with 1 simple and 3 pappose setae; dactylus 2.2 propodus length, with 3 long simple setae terminally (Fig. 3H).

Maxilliped 2 basis equal to all other articles together, with 2 plumose and 1 pappose setae; ischium 0.05 basis length, with pappose seta; merus 3.3 ischium length, with pappose seta medially, pappose seta laterally; carpus 2.0 merus length, with 2 simple and 3 pappose setae medially, plumose seta laterally; propodus 0.9 carpus length, with 5 simple setae medially, 2 plumose setae laterally; dactylus 0.5 propodus length, with 4 simple setae terminally (Fig. 3I).

Maxilliped 3 basis 1.3 all other articles together, with 7 pappose setae, 2 plumose setae; ischium 0.03 basis length, unarmed; merus 4.0 ischium length, with pappose seta medially, plumose seta laterally; carpus 2.5 merus length, with 9 pappose setae medially, 4 pappose setae laterally; propodus 0.6 carpus length, with 2 plumose setae medially, 3 plumose setae laterally; dactylus 0.8 propodus length, with 3 simple setae terminally; exopod 0.8 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 18A).

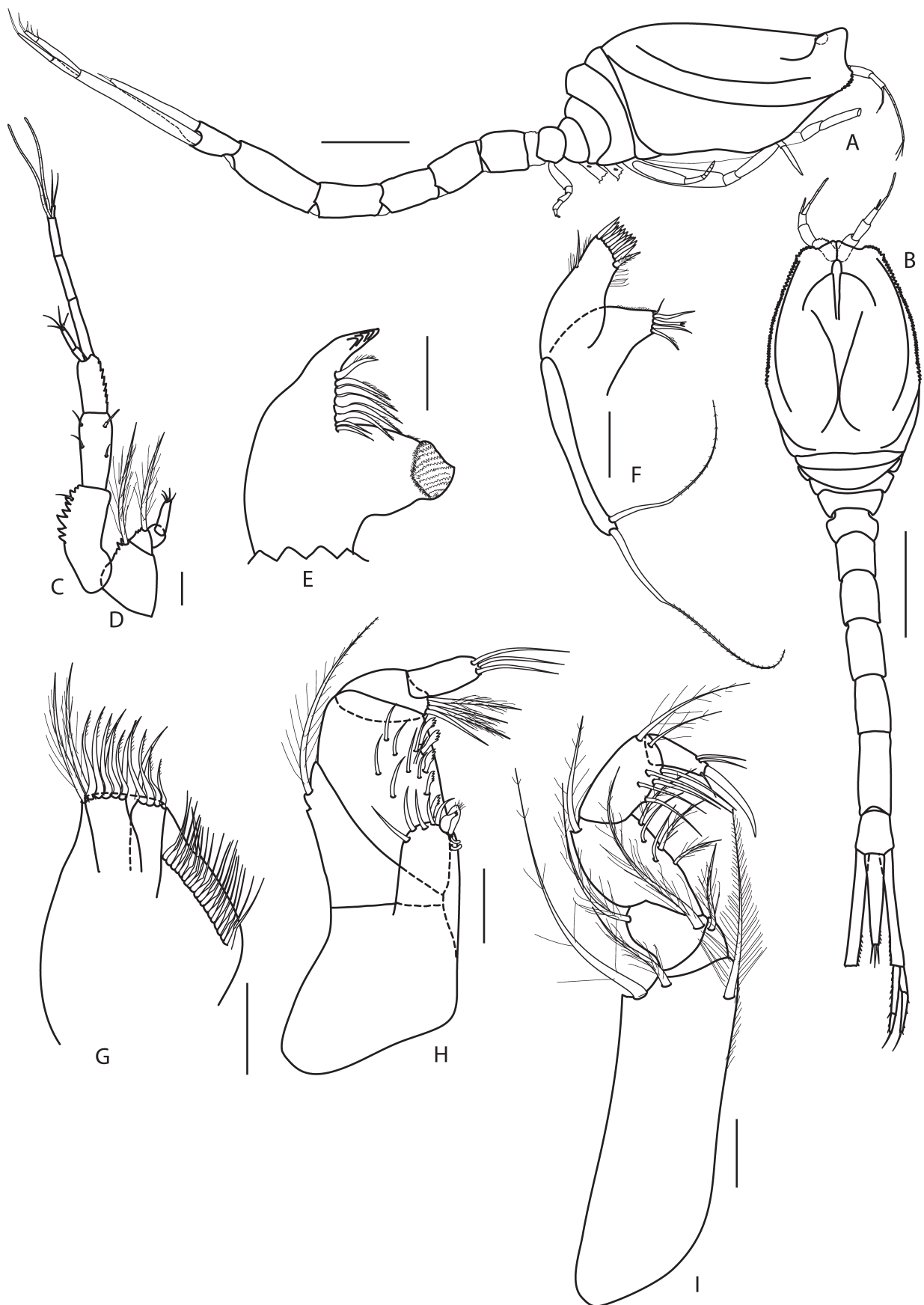


FIGURE 3. *Austrolamprops sulcatus* n. sp. Holotype ovigerous female NMV J62284, A, side view; B, dorsal view. Paratype subadult female NMV J62285, C, antennule; D, antenna; E, mandible; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

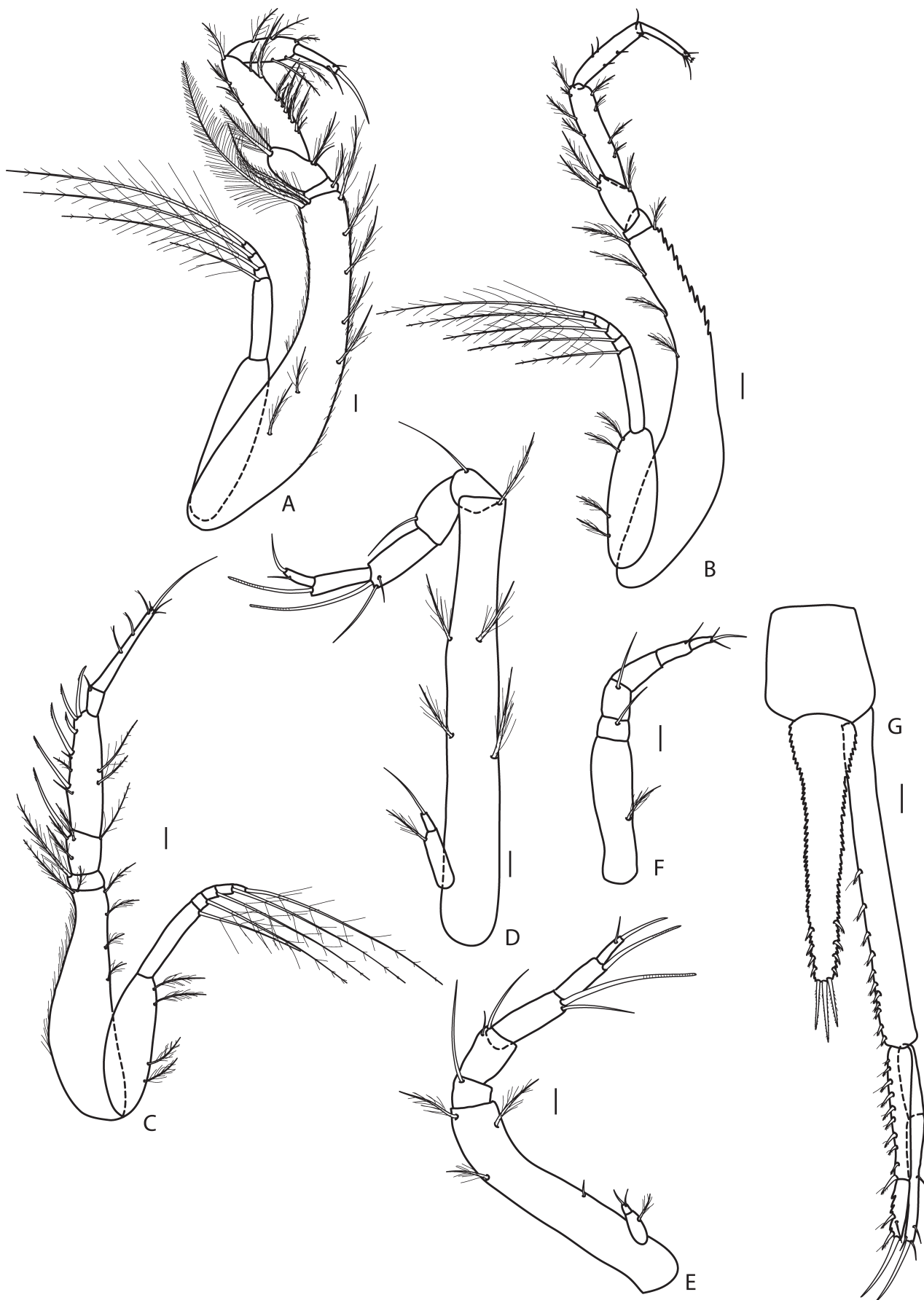


FIGURE 4. *Austrolamprops sulcatus* n. sp. Paratype subadult female NMV J62285, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.

Pereopod 1 basis equal to all other articles together, with 5 pappose setae, medial margin serrate; ischium 0.03 basis length, unarmed; merus 4.0 ischium length, with pappose seta medially, 2 pappose setae laterally; carpus 2.4 merus length, with 8 pappose setae; propodus 0.8 carpus length, with 6 simple setae; dactylus 0.7 propodus length, with 4 simple setae terminally; exopod 0.8 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 4B).

Pereopod 2 basis 0.8 all other articles together, with 6 pappose setae; ischium 0.07 basis length, with pappose seta; merus 2.3 ischium length, with 1 plumose, 3 pappose and 1 microserrate setae; carpus 3.0 merus length, with 2 simple, 3 plumose and 5 microserrate setae; propodus 0.2 carpus length, with simple seta; dactylus 3.6 propodus length, with 3 setae with single subterminal setule, and 4 simple setae terminally; exopod 1.2 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 4C).

Pereopod 3 basis 2.0 all other articles together, with 5 pappose setae; ischium 0.06 basis length, with simple seta; merus 1.6 ischium length, with simple seta; carpus 1.3 merus length, with 2 simple and 1 annulate setae; propodus 0.8 carpus length, with annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.2 basis length, of 2 articles with 1 pappose and 1 simple seta (Fig. 4D).

Pereopod 4 basis 1.1 all other articles together, with 1 simple and 3 pappose setae; ischium 0.1 basis length, with simple seta; merus 2.0 ischium length, with 2 simple setae; carpus 1.3 merus length, with 1 simple and 1 annulate setae; propodus 0.8 carpus length, with annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles with 1 pappose and 2 simple setae (Fig. 4E).

Pereopod 5 basis 0.9 all other articles together, with pappose seta; ischium 0.2 basis length, with simple seta; merus 1.8 ischium length, with simple seta; carpus 1.1 merus length, unarmed; propodus 1.6 carpus length, with simple seta; dactylus 0.8 propodus length, with 3 simple setae terminally (Fig. 4F).

Telson 2.5 length of pleonite 6, with 4 microserrate lateral setae, entire margins serrate, 3 microserrate terminal setae, 0.2 telson length (Fig. 4G).

Uropod peduncles 3.0 pleonite 6 length, 0.8 telson length, with 11 microserrate setae with single subterminal setule medially. Uropod endopod of 2 articles, 0.6 peduncle length; article 1 2.3 article 2 length, with 10 microserrate setae with single subterminal setule medially; article 2 0.4 article 1 length, with 2 microserrate setae with single subterminal setule medially, 1 simple seta, simple terminal seta 1.2 article 2 length, medial margin serrate. Uropod exopod equal to length of endopod; article 1 0.6 article 2 length, unarmed; article 2 1.8 article 1 length, with 3 simple setae laterally, simple seta medially, simple terminal seta 0.5 article 2 length (Fig. 4G).

Paratype subadult male, NMV J62286.

Carapace and appendages as in female.

With 3 pairs of pleopods.

Etymology. The species is named *sulcatus* in reference to the sulcus on the carapace.

Depth. 1130–1850 m.

Distribution. Victoria, Australia.

Remarks. The carapace is distinctive in having paired lateral ridges; no other species with two articles in the uropod endopod has a carapace with similar ridges. Both species of *Watlingia* have no ridges on the carapace, and all species of *Pseudodiastylis* lack a maxillule palp.

***Bathylamprops* Zimmer, 1908**

Bathylamprops Zimmer, 1908: 173.

Type species. *Bathylamprops calmani* Zimmer, 1908, by monotypy.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, without lenses, pseudorostral lobes long, acute. Antennule flagella unequal, accessory flagellum shorter than article 1 of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 longer than basis of pereopod 4. Telson variable. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* antenna length unknown, without penial lobes, with 3 pairs of pleopods.

Species. *Bathylamprops calmani* Zimmer, 1908, *B. caperatus* Corbera, 2008, *B. michelae* Reyss, 1978a, *B.*

motasi Băcescu, 1976, *B. natalensis* Jones, 1969, *B. pagesi* Corbera, 2008, *B. paraleucon* **n. sp.**, *B. scaber* Corbera, 2006.

Remarks. *Bathylamprops* is most easily recognized by the long, acute pseudorostral lobes, which are unusual within the Lampropidae.

Key to the species of *Bathylamprops*

1. Telson less than 0.5 length of uropod peduncles. *B. michelae*
- Telson longer than 0.5 length of uropod peduncles. 2
2. Carapace with distinct lateral ridge or ridges 3
- Carapace without ridges 4
3. Telson with at least 6 lateral setae. Eyelobe without spine *B. caperatus*
- Telson with 4 lateral setae. Eyelobe with distinct spine *B. pagesi*
4. Carpus of mxp3 equal or narrower than merus. 5
- Carpus of mxp3 wider than merus 6
5. Telson distinctly shorter than uropod peduncles. *B. natalensis*
- Telson subequal to uropod peduncles *B. paraleucon* **n. sp.**
6. Carapace without wrinkles, rugose appearance, or tubercles *B. scaber*
- Carapace with wrinkles and/or tubercles 7
7. Telson with 6 or fewer lateral setae. *B. motasi*
- Telson with 8 or more lateral setae *B. calmani*

Bathylamprops calmani Zimmer, 1908

Bathylamprops calmani Zimmer, 1908: 173–175, figs 60–70.—Stebbing, 1913: 159, fig. 108.—Jones, 1969: 120.—Day, 1978: 165–168, 179, fig. 10 A–I.

Type material. Holotype: ZMB 13357, female. Dar-es-Salaam, 6°12'S, 41°17'E.

Diagnosis. Carapace without lateral ridges, entire carapace rugose, without tubercles; eyelobe without spine. Maxilliped 3 carpus 2.0 width of merus. Telson 0.7 uropod peduncles, with 8 pairs lateral setae. *Adult male* unknown.

Depth. 1300–5350 m.

Distribution. Dar-es-Salaam, Africa.

Remarks. The original description by Zimmer (1908) was based on a damaged mature female specimen. Day (1978) described a more complete mature female specimen. *Bathylamprops calmani* can be distinguished from all other *Bathylamprops* by the combination of the carapace without ridges, expanded carpus of maxilliped 3, and the telson longer than 0.5 the length of the uropod peduncles, with at least eight pairs of lateral setae.

Bathylamprops caperatus Corbera, 2008

Bathylamprops caperatus Corbera, 2008: 21–24, figs 4–6.

Type material. Holotype: MNHN-Cu1133, preparatory female. Salomon Islands, 8°31.2'S, 160°37.7'E. Not seen.

Diagnosis. Carapace with incomplete lateral ridge, from anteroventral corner to mid-lateral part of carapace, anterior portion of carapace rugose, without tubercles; eyelobe without spine. Maxilliped 3 unknown. Telson 0.9 uropod peduncles, with 6 pairs of lateral setae. *Adult male* unknown.

Depth. 1036–1138 m.

Distribution. Salomon Islands, 8°31.2'S, 160°37.7'E.

Remarks. The most similar species is *Bathylamprops pagesi*, which also has ridges on the carapace. However, *B. caperatus* can be differentiated from *B. pagesi* by the telson and the eyelobe. In *B. pagesi*, the eyelobe has a distinct spine, and the telson has four pairs of lateral setae, while in *B. caperatus* the eyelobe has no spine, and the telson has six pairs of lateral setae.

***Bathylamprops michelae* Reyss, 1978a**

Bathylamprops michelae Reyss, 1978a: 10–12, fig. 5.

Type material. Deposition unknown. North Atlantic, 53°44'9"N, 17°51'8"W. Not seen.

Diagnosis. Carapace without lateral ridges, not rugose, without tubercles; eyelobe without spine. Maxilliped 3 unknown. Telson 0.4 uropod peduncles, with 2 pairs of lateral setae. *Adult male* unknown.

Depth. 2450 m.

Distribution. North Atlantic, 53°44'9"N, 17°51'8"W.

Remarks. *Bathylamprops michelae* is unique in the genus in having a very short telson, less than 0.5 the length of the uropod peduncles.

***Bathylamprops motasi* Băcescu & Muradian, 1976**

Bathylamprops motasi Băcescu & Muradian, 1976: 15–17, figs 1–2.

Type material. Holotype: GAM 400, adult male. Florida, USA.

Diagnosis. Carapace without lateral ridges, entirely rugose, without tubercles; eyelobe without spine. Maxilliped 3 carpus 2.0 width of merus. Telson 0.6 uropod peduncles, with 6 pairs of lateral setae. *Adult male* unknown. *Subadult male* carapace dorsoventrally flattened relative to female.

Depth. 2100–2375 m.

Distribution. Florida.

Remarks. *Bathylamprops motasi* is most similar to *B. calmani*, but has six or fewer pairs of lateral setae on the telson, while *B. calmani* has at least eight pairs of lateral setae on the telson.

***Bathylamprops natalensis* Jones, 1969**

Bathylamprops natalensis Jones, 1969: 121–122, fig. 10.

Type material. Holotype: UZMK, female. Cape Town, Durban, 35°44'S, 39°16'E. Not seen.

Diagnosis. Carapace without lateral ridges, not rugose, covered with small tubercles; eyelobe without spine. Maxilliped 3 carpus 1.0 width of merus. Telson 0.7 uropod peduncles, with 9 pairs of lateral setae. *Adult male* unknown.

Depth. 3800 m.

Distribution. Cape Town, South Africa, 35°44'S, 39°16'E.

Remarks. *Bathylamprops natalensis* is most similar to *B. calmani*, *B. motasi* and *B. scaber*, but can be distinguished by the narrow carpus of maxilliped 3, which is no wider than the merus. In the other three species, the carpus of maxilliped 3 is distinctly wider than the merus.

***Bathylamprops pagesi* Corbera, 2008**

Bathylamprops pagesi Corbera, 2008: 18–21, figs 1–3.

Type material. Holotype: MNHN-Cu1132, preparatory female. Salomon Islands, 10°11.8'S, 161°18.7'E. Not seen.

Diagnosis. Carapace with 3 pairs of incomplete lateral ridges, not rugose, without tubercles; eyelobe with spine. Maxilliped 3 carpus 2.0 width of merus. Telson 1.0 uropod peduncles, with 4 pairs of lateral setae. *Adult male* unknown.

Depth. 367–533 m.

Distribution. Salomon Islands, 10°11.8'S, 161°18.7'E.

Remarks. This species can be distinguished from all other *Bathylamprops* by the distinct spine on the eyelobe and the multiple lateral ridges on the carapace.

***Bathylamprops paraleucon* n. sp.**

(Figs 5–7)

Type material. Holotype ovigerous female, NIWA 93174; paratype ovigerous female dissected, NIWA 93170; paratype subadult male dissected, NIWA 93202 Chatham Rise, 44.49°S, 177.14°E, 1235–1239 m, 6 April 2007.

Other material. 1 individual NIWA 95417, 1 individual NIWA 95418, Challenger Plateau, 40.13°S, 170.21°E, 803–805 m, 5 June 2007; 2 individuals in poor condition, NIWA 95419, Chatham Rise, 43.53°S, 178.5°E, 346 m, 24 April 2007; 2 females, 1 subadult male, 2 juveniles, NIWA 95420, 4 subadult females NIWA 95421, 2 subadult females NIWA 95422, Chatham Rise, 44.49°S, 177.14°E, 1235–1239 m, 6 April 2007. 4 individuals NIWA 95423, Chatham Rise, 44.56°S, 178.48°W, 1076–1103 m, 10 April 2007.

Diagnosis. Carapace without lateral ridges, not rugose, without tubercles, with row of teeth on anterior margin; eyelobe without spine. Antennule main flagellum terminal article long. Maxilliped 3 carpus 1.0 width of merus. Telson 1.0 uropod peduncles, with 2 pairs of lateral setae. *Adult male* unknown.

Description. Holotype ovigerous female, NIWA 93174; paratype ovigerous female, NIWA 93170.

Ovigerous female, holotype 4.5 mm, paratype 4.3 mm. Carapace unarmed, with row of denticles on anterior margin; pseudorostral lobes 0.6 carapace total length, extending 0.3 carapace length anterior of eyelobe; eyelobe 0.1 carapace length, without lenses; carapace 1.1 length of pereonites together; pereonites and pleonites stout (Fig. 5A, B).

Antennule peduncle article 1 equal to articles 2 and 3 together, with 1 simple and 2 plumose setae; article 2 0.6 article 1 length, with 3 plumose setae; article 3 0.6 article 2 length, with 2 simple setae; main flagellum of 3 articles, terminal article longer than subterminal article, with 1 simple and 2 aesthetasc setae; accessory flagellum 0.4 main flagellum length, of 2 articles, with simple setae (Fig. 5C).

Antenna–maxilliped not examined.

Maxilliped 2 basis 0.9 all other articles together, with 2 thickly plumose setae; ischium 0.1 basis length, unarmed; merus 2.5 ischium length, with sparsely plumose setae medially; carpus 1.2 merus length, with sparsely plumose setae medially; propodus 0.8 carpus length, with sparsely plumose setae medially and thickly plumose seta laterally; dactylus 0.5 propodus length, with simple setae terminally (Fig. 5D).

Maxilliped 3 basis 1.2 all other articles together, with pappose setae medially, 2 plumose setae at distal corner; ischium 0.1 basis length, with pappose seta medially; merus 1.2 ischium length, with pappose seta medially, plumose seta laterally; carpus 2.1 merus length, with pappose and plumose setae medially, 2 plumose setae laterally; propodus 0.9 carpus length, with plumose setae medially and laterally; dactylus 0.5 propodus length, with simple setae terminally; exopod 0.9 basis length, basal article with 3 plumose setae, flagellum with plumo-annulate setae (Fig. 5E).

Pereopod 1 broken, basis with simple setae proximally, plumose setae distally; exopod 0.8 basis length, basal article with 3 plumose setae, flagellum with plumo-annulate setae (Fig. 5F).

Pereopod 2 basis 1.1 all other articles together, with simple, plumose and complex pedunculate setae; ischium apparently absent; merus with 3 plumose and 1 stout microsetate setae; carpus 0.9 merus length, with 3 plumose and 3 stout microsetate setae; propodus 0.5 carpus length, unarmed; dactylus 2.3 propodus length, with 5 slender simple setae and stout simple seta terminally; exopod broken (Fig. 5G).

Pereopod 3 basis 1.3 all other articles together, with 4 plumose setae; ischium 0.1 basis length, with 1 plumose and 2 annulate setae; merus 2.0 ischium length, with 2 plumose and 2 annulate setae; carpus 1.1 merus length, with 2 plumose and 2 annulate setae; propodus 0.5 carpus length, with annulate seta; dactylus 0.8 propodus length, with 2 simple setae and simple stout seta terminally; exopod rudimentary, 0.2 basis length, of 2 articles with 3 simple setae (Fig. 5H).

Pereopod 4 and pereopod 5 broken.

Telson 1.1 length of pleonite 6, with 2 microsetate with subterminal setule lateral setae, 5 subequal terminal microsetate setae with subterminal setule (Fig. 5I).

Uropod peduncles 1.1 pleonite 6 length, 1.0 telson length. Uropod endopod broken; article 1 with 14

microserrate setae with single subterminal setule medially. Uropod exopod of 2 articles; article 1 0.3 article 2 length, with simple seta; article 2 with 2 plumose setae medially, 5 simple setae laterally, 3 stout simple setae terminally (Fig. 5I).

Paratype subadult male, NIWA 93202.

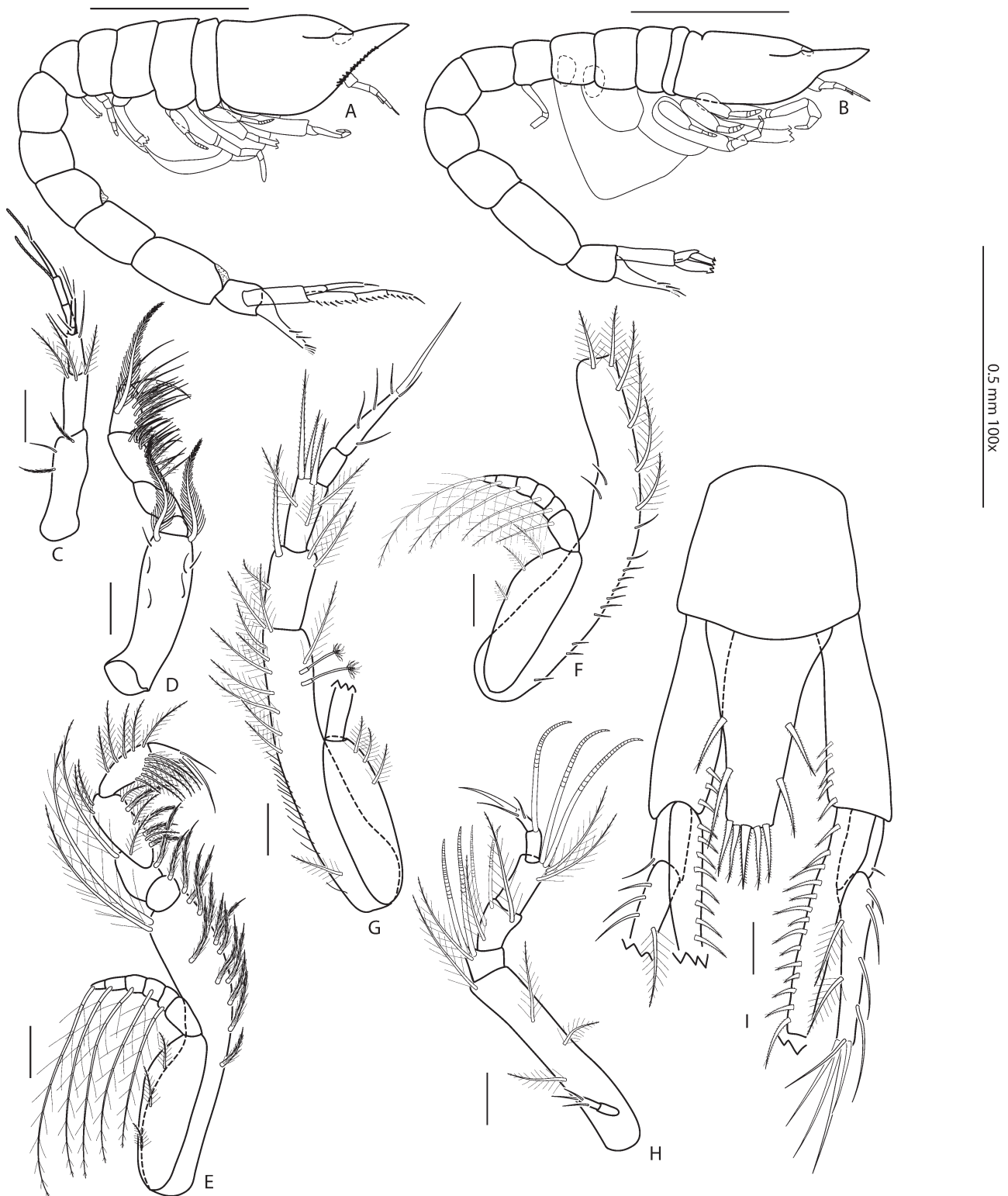


FIGURE 5. *Bathylamprops paraleucon* n. sp. Holotype ovigerous female NIWA 93174, A side view. Paratype ovigerous female NIWA 93170, B, side view; C, antennule; D, maxilliped 2; E, maxilliped 3; F, basis of pereopod 1; G, pereopod 2; H, pereopod 3; I, telson and uropods. Scale bars full body 1.0 mm, all others 0.1 mm.

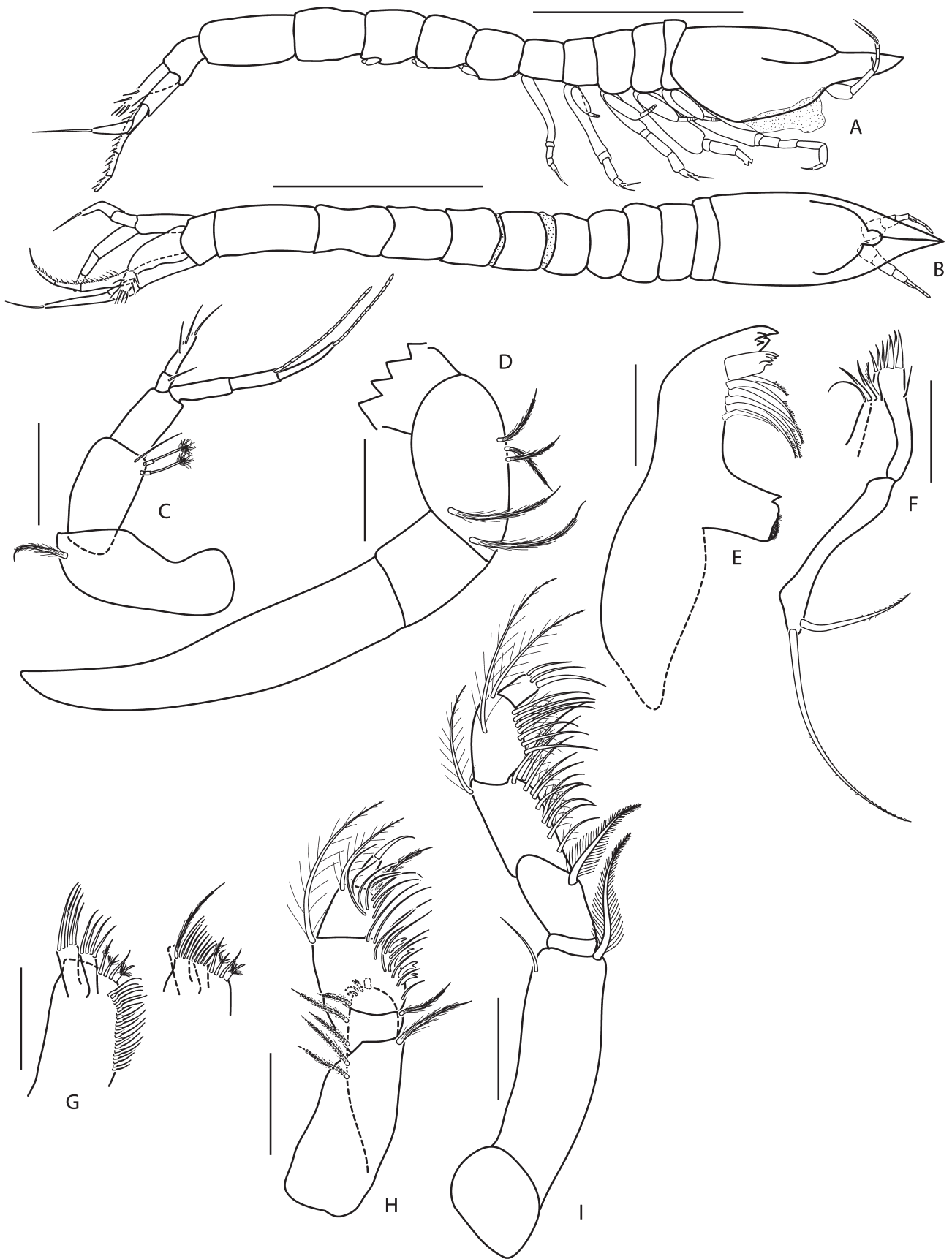


FIGURE 6. *Bathylamprops paraleucon* n. sp. Paratype subadult male NIWA 93202, A, side view; B, dorsal view; C, antennule; D, antenna; E, mandible; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

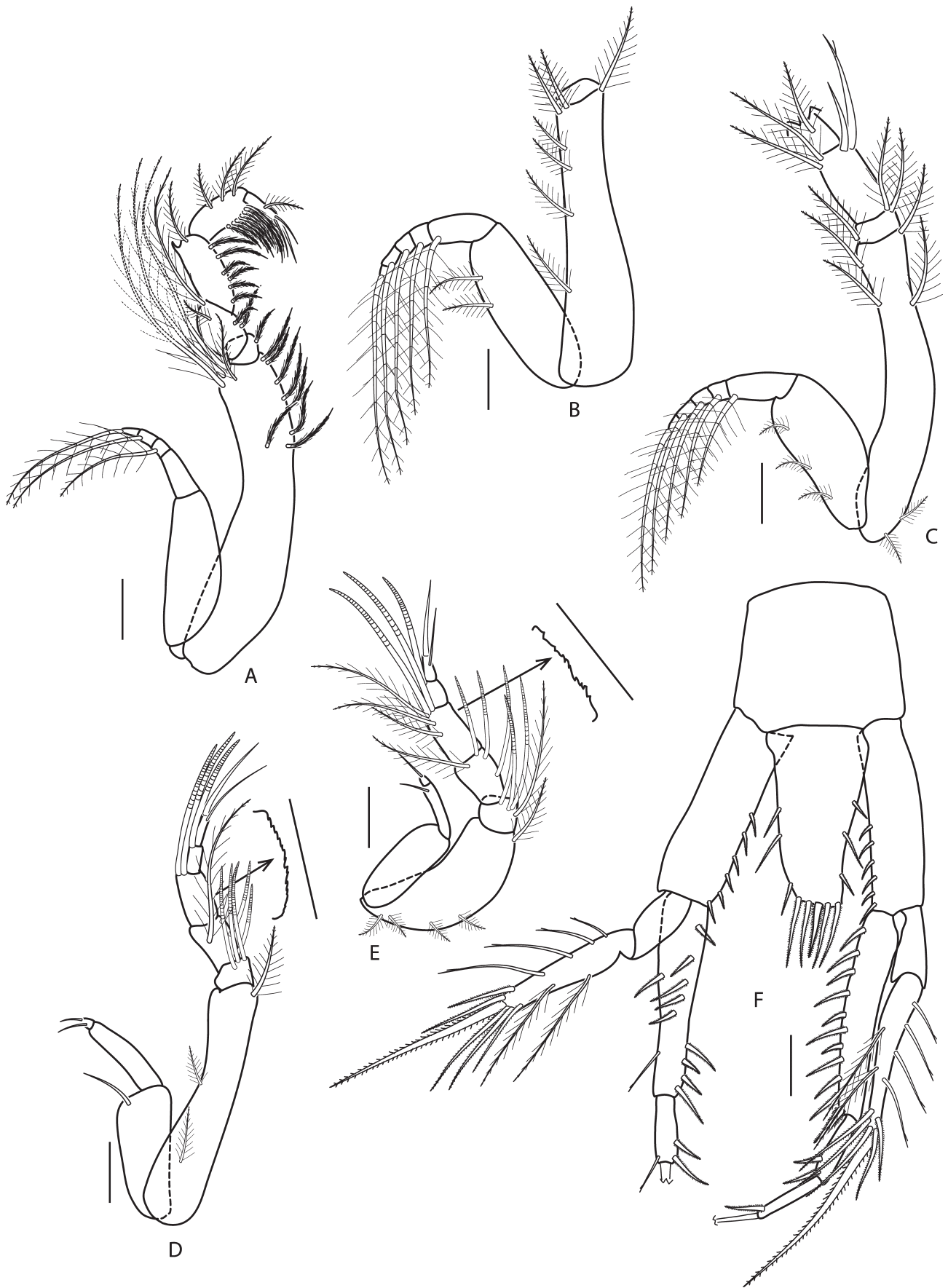


FIGURE 7. *Bathylamprops paraleucon* n. sp. Paratype subadult male NIWA 93202, A, maxilliped 3; B, basis of pereopod 1; C, pereopod 2, broken; D, pereopod 3; E, pereopod 4; F, telson and uropods. Scale bars 0.1 mm.

Subadult male, 3.7 mm. Carapace smooth; pseudorostral lobes 0.6 carapace length, extending 0.3 carapace length anterior of eyelobe; eyelobe 0.07 carapace length, without lenses; carapace 1.3 pereon length; pereonites and pleonites stout (Fig. 6A, B).

Antennule peduncle article 1 equal to articles 2 and 3 together, with pappose seta; article 2 0.6 article 1 length, with 1 simple and 2 complex pedunculate setae; article 3 0.7 article 2 length, unarmed; main flagellum of 3 articles, terminal article longer than subterminal article, with 2 aesthetasc setae; accessory flagellum 0.4 main flagellum length, of 2 articles, with simple setae (Fig. 6C).

Antenna immature, with pappose setae on peduncle (Fig. 6D).

Mandible navicular, with 5 microserrate setae medially, *lacinia mobilis* stout, with 4 cusps (Fig. 6E).

Maxillule with 2 endites; outer endite with 6 stout setae terminally; inner endite with 3 simple and 1 microserrate setae; palp with 2 setae (Fig. 6F).

Maxilla with 3 endites; broad endite rectangular, with 1 pappose, simple, and microserrate setae distally, medial row of pedunculate setae; medial narrow endite with 4 simple setae terminally; distal narrow endite with 5 simple setae terminally; both narrow endites extend past distal border of broad endite (Fig. 6G).

Maxilliped 1 basis produced as broad lobe medially, with 5 pappose setae medially, 2 hook, 1 tricuspid and 1 stout setae distally, pappose seta at interior corner; ischium absent; merus with pappose seta medially; carpus 3.0 merus length, with simple and beak setae medially, plumose seta laterally; propodus 0.7 carpus length, with simple and pappose setae medially, plumose seta laterally; dactylus 0.6 propodus length, with stout simple seta terminally (Fig. 6H).

Maxilliped 2 basis equal to all other articles together, with 1 simple and 1 thickly plumose setae; ischium 0.05 basis length, unarmed; merus 6.0 ischium length, with thickly plumose seta medially; carpus 0.9 merus length, with sparsely plumose setae medially, plumose seta laterally; propodus 1.1 carpus length, with sparsely plumose setae medially, 2 plumose setae laterally; dactylus 0.4 propodus length, with 3 simple setae terminally (Fig. 6I).

Maxilliped 3 basis 1.3 all other articles together, with pappose setae medially, 4 plumose setae at distal corner; ischium 0.03 basis length, with pappose seta; merus 5.0 ischium length, with 2 pappose setae medially, 2 plumose setae laterally; carpus 1.5 merus length, with pappose setae medially, lateral margin produced as tooth, with plumose seta laterally; propodus 1.2 carpus length, with sparsely plumose setae medially, 3 plumose setae laterally; dactylus 0.6 propodus length, with plumose seta laterally, 3 simple setae terminally; exopod 0.8 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 7A).

Pereopod 1 broken, basis with plumose setae; exopod 1.0 basis length, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 7B).

Pereopod 2 basis with 6 plumose setae; ischium 0.07 basis length, with 3 plumose setae; merus 3.8 ischium length, with 2 plumose and 2 stout setae with single subterminal setule; carpus broken; exopod 1.0 basis length, basal article with 3 plumose setae, flagellum with plumo-annulate setae (Fig. 7C).

Pereopod 3 basis 1.4 all other articles together, with 3 plumose setae; ischium 0.08 basis length, with 3 annulate setae; merus 2.5 ischium length, with 1 plumose and 2 annulate setae; carpus 1.0 merus length, with 2 annulate setae; propodus 0.5 carpus length, with annulate seta; dactylus 1.2 propodus length, medial margin serrate, with 2 simple setae terminally; exopod not fully developed (Fig. 7D).

Pereopod 4 basis 0.8 all other articles together, with 5 plumose setae; ischium 0.2 basis length, with 1 plumose and 3 annulate setae; merus 2.0 ischium length, with 1 plumose and 3 annulate setae; carpus 1.1 merus length, with 3 plumose and 2 annulate setae; propodus 0.5 carpus length, with annulate seta; dactylus 1.0 propodus length, medial margin serrate, with 2 simple setae terminally; exopod not fully developed (Fig. 7E).

Pereopod 5 broken.

Telson 1.3 length of pleonite 6, with 3 microserrate lateral setae, 5 subequal microserrate terminal setae (Fig. 7F).

Uropod peduncles 1.3 pleonite 6 length, 1.0 telson length, with 6 microserrate setae medially. Uropod endopod of 3 articles, 1.8 peduncle length; article 1 1.4 articles 2 and 3 together, with 10–11 microserrate setae medially, 1 seta with single subterminal setule laterally; article 2 with 2 microserrate setae medially, 1 seta with single subterminal setule laterally; article 3 1.0 article 2 length, with 1 microserrate seta medially, terminal seta simple? Uropod exopod 0.6 length of endopod; article 1 0.4 article 2 length, unarmed; article 2 with 2 plumose, 5 microserrate, and 4 simple with single subterminal setule setae laterally, microserrate terminal seta 0.9 exopod length (Fig. 7F).

Etymology. The new species is named *paraleucon* because the overall body form greatly resembles species of *Leucon* with long pseudorostral lobes, and with which the new species could easily be misidentified.

Depth. 346–1239 m.

Distribution. Challenger Plateau, Chatham Rise, New Zealand, 40.13–44.49°S, 170.21°E–178.48°W.

Remarks. Within the Cumacea, the long terminal article on the antennule main flagellum is unusual. Within the genus, all other species have the carapace expanded dorsolaterally, but *Bathylamprops paraleucon* has no such dorsolateral expansion, producing the *Leucon*-like impression

***Bathylamprops scaber* Corbera, 2006**

Bathylamprops scaber Corbera, 2006: 144–147, figs 1–2.

Type material. Holotype: MNHN-Cu988, preparatory female. Paratypes: MNHN-Cu989, 2 preparatory females, 1 preparatory male, 1 juvenile; MNHN-Cu990, 1 manca; MNHN-Cu991, 1 manca. New Caledonia, 20°48′–24°44′S, 166°27.07′–167°58.34′E.

Diagnosis. Carapace without lateral ridges, not rugose, without tubercles; eyelobe without spine. Maxilliped 3 carpus 1.7 width of merus. Telson 0.8 uropod peduncles, with 9–11 pairs of lateral setae. *Adult male* unknown.

Depth. 760–1980 m.

Distribution. New Caledonia, 20°48′–24°44′S, 166°27.07′–167°58.34′E.

Remarks. *Bathylamprops scaber* can be differentiated from *B. pagesi* and *B. calmani* by the carapace being smooth rather than rugose.

***Brachylamprops* n. gen.**

Type species. *Brachylamprops scabridus* n. sp.

Diagnosis. Carapace not dorsoventrally flattened, without marginal carina, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae, 1 much shorter than the other. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson long, more than 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, no exopods on pereopods 3–4, without pleopods. *Male* with long antenna, extending past pereon, without penial lobes, with 3 pairs of pleopods.

Species. *Brachylamprops scabridus* n. sp.

Etymology. A combination of *brachy*, from Latin, meaning short, and the generic name *Lamprops*, alluding to the short body of this lampropid. Gender masculine.

Remarks. Within the Lampropidae, the lack of rudimentary exopods on pereopods 3–4 in the female is unusual. This genus is recognizable by the short and robust carapace and abdomen.

***Brachylamprops scabridus* n. sp.**

(Figs 8–11)

Type material. Holotype: ovigerous female, AM P101483, 33°43′–44°S, 151°46′E 174 m, coast of New South Wales, Australia, 20 December 1985. Paratypes: ovigerous female (dissected), AM P101484, collected with holotype; ovigerous female (dissected), AM P101485, collected with holotype; adult male (dissected), AM P101486, collected with holotype.

Other material. 9 individuals, AM P101487, 33°43′–44°S, 151°46′E, 174 m, 20 December 1985; 1 individual, AM P101488, 32°53′S, 152°35′E, 165 m, 15 August 1985; 1 adult male, AM P101489, 33°45′S, 151°43′E, 176 m, 5 December 1977. 2 ovigerous females, 3 preparatory females, 1 broken juvenile female, NMV J54385, 34°59′31″S, 151°5′56″E, 204 m, 14 July 1986.

Description. Holotype female, AM P101483. Carapace covered in small spines, without marginal carina, not flattened, with paired posteriodorsal prominences, several large tumidities on carapace; pseudorostral lobes 0.4 carapace length, blunt; eyelobe 0.5 carapace length, with 2 lenses; carapace 1.2 length of pereonites together. Pereonites with 2 paired dorsal ridges. Pleonites 1–3 with 2 paired dorsal ridges, pleonites 4–5 with single central dorsal ridge, pleonite 6 with 2 paired dorsal ridges (Fig. 8A).

Paratype female, AM P101484, 5.2 mm.

Antennule peduncle article 1 unarmed; article 2 0.7 article 1 length, with 7 simple setae; article 3 0.5 article 2 length, with 5 simple setae; main flagellum of 3 articles, with 4 simple setae and 2 aesthetascs terminally; accessory flagellum of 2 articles, 0.9 main flagellum length, with 3 simple setae (Fig. 8B).

Antenna not examined.

Mandible navicular, with 10 microserrate setae medially, *lacinia mobilis* with 3 cusps (Fig. 8C).

Maxillule with 2 endites; outer endite with 10 setae terminally; inner endite with 1 dentate and 3 simple setae; palp with 2 setae, 1 0.3 length of longer seta (Fig. 8D).

Maxilla with 3 endites; broad endite with 1 pappose and many simple setae distally, medial row of 23 simple setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 5 microserrate setae terminally; both narrow endites extend past distal margin of broad endite (Fig. 8E).

Maxilliped 1 basis produced medially as broad lobe, with 2 simple and 2 stout microserrate setae terminally, 2 hook setae and 6 simple setae medially; ischium absent; merus 0.2 basis length, with plumose seta laterally; carpus 2.3 merus length, with 12 simple and 8 comb setae medially, 1 plumose seta laterally; propodus 0.6 carpus length, with 3 pappose and 5 simple setae; dactylus 0.9 propodus length, with 4 simple setae (Fig. 8F).

Maxilliped 2 basis longer than all other articles together, distal corner expanded, with 3 pappose setae medially, 5 plumose setae on distal corner; ischium 0.8 basis length, with pappose seta; merus 2.0 ischium length, with plumose seta laterally; carpus 1.9 merus length, with 7 pappose setae medially, plumose seta laterally; propodus 0.8 carpus length, with 3 simple setae medially, simple seta laterally; dactylus 0.3 propodus length, with 1 microserrate and 4 simple setae terminally (Fig. 8G).

Maxilliped 3 basis longer than all other articles together, with 14 pappose setae medially, 3 plumose setae distally; ischium 0.03 basis length, unarmed; merus 3.0 ischium length, with pappose seta medially, plumose seta laterally; carpus 3.8 merus length, with 2 simple and 9 pappose setae medially, with plumose seta laterally; propodus 0.5 carpus length, with 4 plumose setae medially, 4 plumose setae laterally; dactylus 0.6 propodus length, with 3 simple setae terminally; exopod longer than basis, basal article unarmed, flagellum with plumo-annulate setae (Fig. 8H).

Pereopod 1 basis as long as next 4 articles together, with 22 pappose setae medially; ischium 0.07 basis length, with 2 pappose setae; merus 2.5 ischium length, with 3 pappose setae, medial margin with 2 teeth; carpus 2.5 merus length, with 7 pappose setae, medial margin serrate; propodus equal to carpus length, with 1 annulate and 3 simple setae; dactylus broken; exopod shorter than basis, basal article with 6 pappose setae, flagellum with plumo-annulate setae (Fig. 9A).

Pereopod 2 basis as long as all other articles together, with 4 pappose setae; ischium 0.04 basis length, with pappose seta; merus 4.0 ischium length, with 5 pappose setae; carpus 2.5 merus length, with 9 simple setae; propodus 0.2 carpus length, with 2 simple setae; dactylus 4.0 propodus length, with 5 simple setae; exopod 0.4 basis length, basal article with 2 pappose setae, flagellum with plumo-annulate setae (Fig. 9B).

Pereopod 3 basis 2.3 all other articles together, with 14 pappose setae; ischium 0.04 basis length, with 2 simple setae; merus 4.0 ischium length, with 2 simple setae; carpus 0.9 merus length, with 3 simple and 2 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.4 propodus length, with 3 simple setae terminally; exopod absent (Fig. 9C).

Pereopod 4 basis 1.7 all other articles together, with 6 pappose and 2 simple setae; ischium 0.07 basis length, unarmed; merus 2.7 ischium length, unarmed; carpus 0.9 merus length, with 2 simple and 2 annulate setae; propodus 0.9 carpus length, with 2 annulate setae; dactylus 0.3 propodus length, with 5 simple setae terminally; exopod absent (Fig. 9D).

Pereopod 5 basis 1.2 all other articles together, with 1 pappose and 11 simple setae; ischium 0.1 basis length, unarmed; merus 2.3 ischium length, with 2 simple setae; carpus 0.9 merus length, with 2 simple and 1 annulate setae; propodus 0.8 carpus length, with 1 simple and 2 annulate setae; dactylus 2.5 propodus length, with simple seta terminally (Fig. 9E).

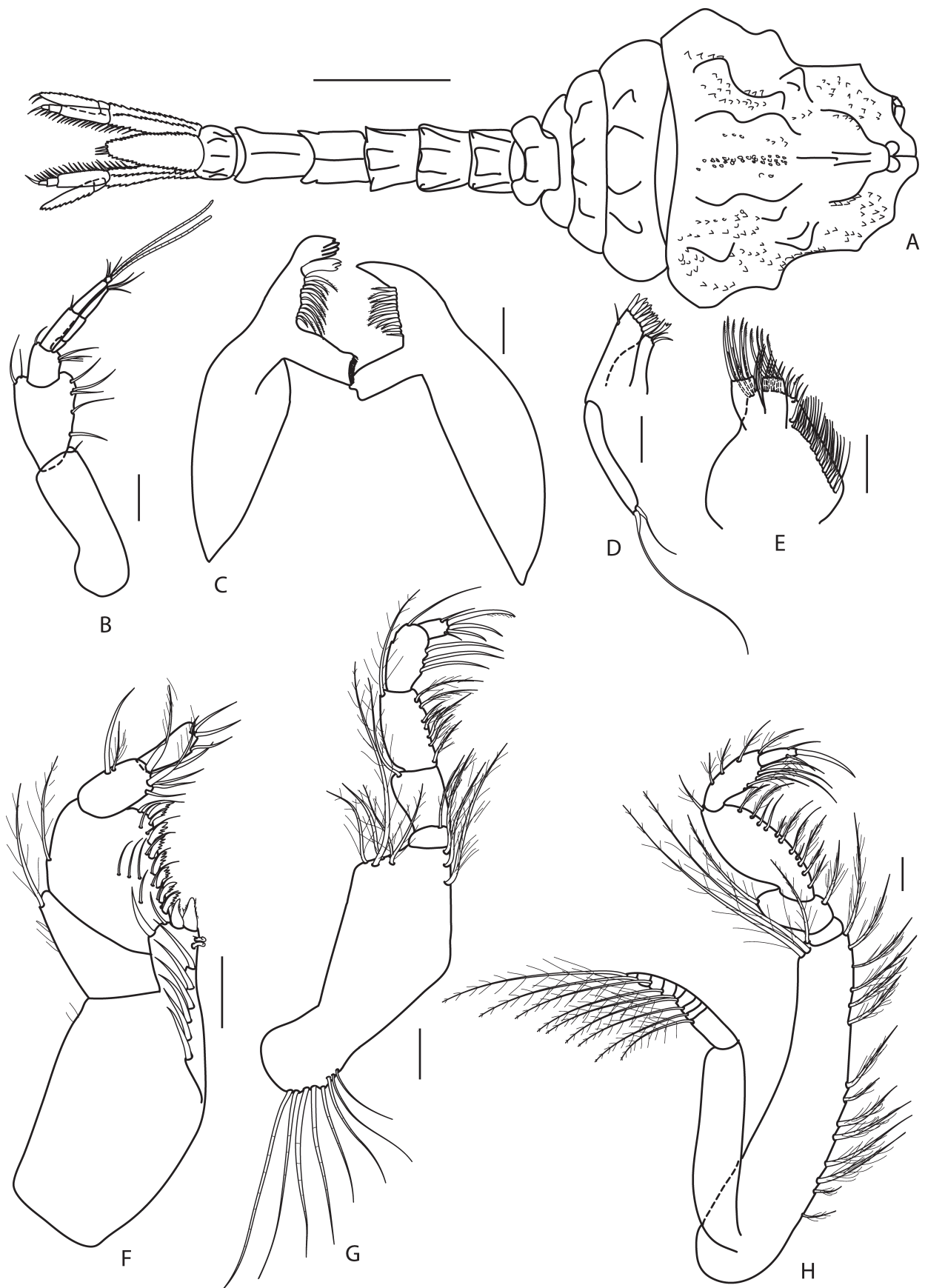


FIGURE 8. *Brachylamprops scabridus* n. sp. Holotype ovigerous female AM P101483, A, dorsal view. Paratype female AM P101484, B, antennule. Paratype female AM P101485, C, mandibles; D, maxillule; E, maxilla; F, maxilliped 2; G, maxilliped 2; H, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.

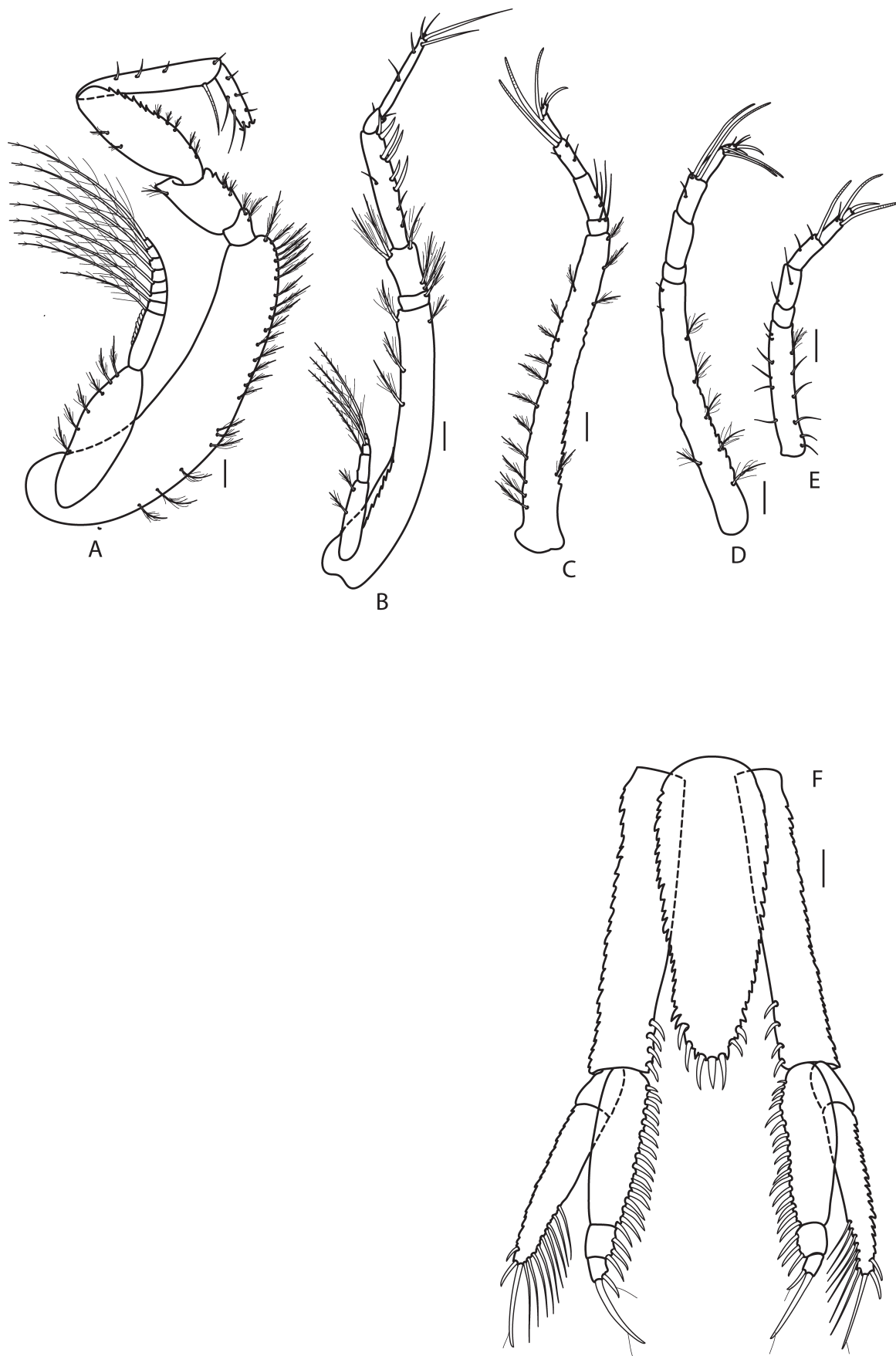


FIGURE 9. *Brachylamprops scabridus* n. sp. Paratype female AM P101485 A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

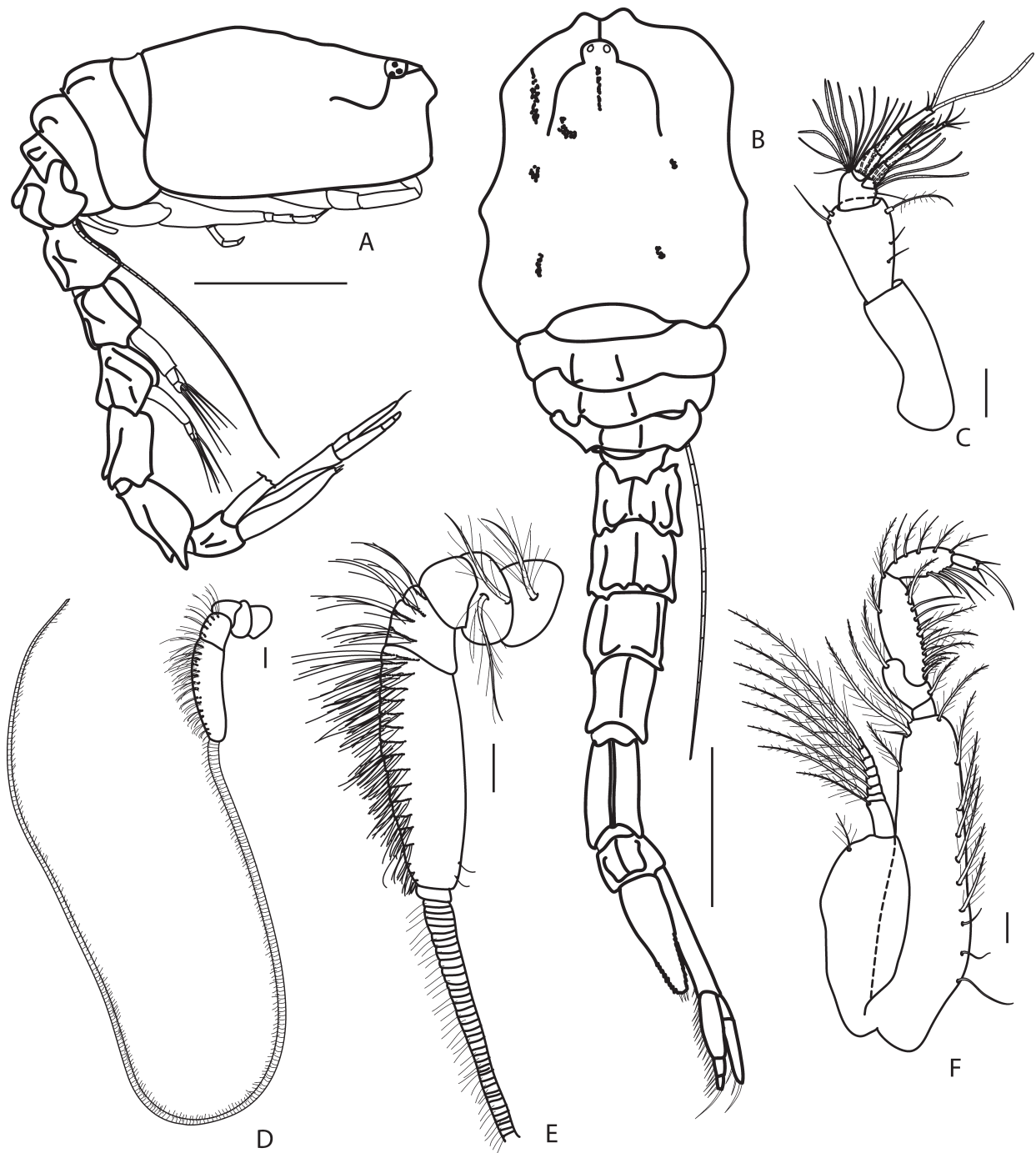


FIGURE 10. *Brachylamprops scabridus* n. sp. Paratype adult male AM P101486, A, side view; B, dorsal view; C, antennule; D, antenna; E, detail of antennal peduncle; F, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.

Telson 4.5 length of pleonite 6, margins serrate, with 2 simple lateral setae, 3 terminal setae subequal to lateral setae (Fig. 9F).

Uropod peduncles 4.2 pleonite 6 length, margins serrate, equal to telson length. Uropod endopod of 3 articles, 0.7 peduncle length; article 1 3.1 articles 2 and 3 together, with 16–17 simple setae medially; article 2 0.2 article 1 length, with 3 simple setae medially; article 3 0.8 article 2 length, with 1 lateral and 1 terminal simple setae with single subterminal setule, terminal seta 3.25 article 3 length. Uropod exopod subequal to endopod; article 1 0.3 article 2 length, unarmed; article 2 with 7–9 simple setae medially, 2 simple setae laterally, terminal seta with single subterminal setule, 0.5 article 2 length (Fig. 9F).

Paratype male, AM P101486, 5.5 mm. Carapace same pattern of ridges and tumidities present, but less pronounced than in female; pseudorostral lobes 0.4 carapace length; eyelobe 0.09 carapace length, with 2 lenses;

carapace 1.6 pereonites. Pereonites with pair of dorsal ridges. Pleonites 1–3 with 2 pairs dorsal ridges, pleonites 4–6 with 1 central and 1 pair dorsal ridges (Fig. 10A, B).

Antennule peduncle article 1 1.3 articles 2 and 3 together, unarmed; article 2 0.6 article 1 length, with 3 simple and 1 pedunculate and 1 plumo-pedunculate setae; article 3 0.4 article 2 length, with 1 simple and group of many aesthetascs distally; main flagellum of 3 articles, with 2 simple setae and 2 aesthetascs; accessory flagellum of 3 articles, with 5 simple setae (Fig. 10C).

Antenna extending to posterior border of pleonite 4; article 1 with pappose seta; article 2 with 2 pappose setae; article 3 unarmed; articles 4 and 5 with ranks of setae, not completely encircling; flagellum with short articles, 1 seta per article (Fig. 10D, E).

Maxilliped 3 basis 1.4 all other articles together, with 3 simple and 7 plumose setae medially, 3 plumose setae distally; ischium 0.04 basis length, unarmed; merus 1.5 ischium length, with plumose seta medially, plumose seta laterally; carpus 6.0 merus length, with 6 plumose and 6 simple setae medially, 2 plumose setae laterally; propodus 0.6 carpus length, with 5 simple setae medially, 5 plumose setae laterally; dactylus 0.4 propodus length, with 3 simple setae terminally; exopod shorter than basis, basal article with plumose seta, flagellum with plumo-annulate setae (Fig. 10F).

Pereopod 1 basis longer than next 4 articles together, with 9 plumose setae medially, 7 plumose setae laterally, lateral margin serrate; ischium 0.05 basis length, with plumose seta; merus 2.5 ischium length, with 2 plumose setae medially and 2 plumose setae laterally; carpus 2.8 merus length, with 3 plumose setae medially, 4 plumose setae laterally, medial margin serrate; propodus equal to carpus length, with 5 simple and 3 plumose setae; dactylus 0.6 propodus length, with 12 simple setae; exopod broken, maxilliped 3 exopod to show approximate size (Fig. 11A).

Pereopod 2 broken, not illustrated.

Pereopod 3 basis 2.4 all other articles together, medial and lateral margins serrate, with simple seta; ischium 0.05 basis length, with 2 simple setae; merus 2.3 ischium length, with 2 simple setae; carpus 0.9 merus length, with 2 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod shorter than basis, basal article with 6 plumose setae, flagellum with plumo-annulate setae (Fig. 11B).

Pereopod 4 basis 2.0 all other articles together, with 5 plumose setae; ischium 0.06 basis length, with 2 simple setae; merus 3.0 ischium length, with 2 simple setae; carpus 0.9 merus length, with 1 simple and 2 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.4 propodus length, with 3 simple setae terminally; exopod shorter than basis, basal article with 3 plumose setae, flagellum with plumo-annulate setae (Fig. 11C).

Pereopod 5 basis as long as next 4 articles together, with 1 simple and 5 plumose setae; ischium 0.2 basis length, with 2 simple setae; merus 1.6 ischium length, with 2 simple setae; carpus 1.11 merus length, with 1 simple and 2 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.7 propodus length, with 2 simple setae terminally (Fig. 11D).

Pleopod 1 biramous, basal article with 9 plumose setae, medial corner serrate; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 11E).

Pleopod 2 biramous, basal article with 4 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 11F).

Pleopod 3 biramous, basal article with 3 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 11G).

Telson 2.6 length of pleonite 6, with 3 simple lateral setae, lateral margins with few serrations, 3 terminal microsetate setae (Fig. 11H).

Uropod peduncles 2.8 pleonite 6 length, 1.1 telson length, with 21 microsetate setae medially. Uropod endopod of 3 articles, 0.7 peduncle length; article 1 2.1 articles 2 and 3 together, with 16 microsetate setae with subterminal setule medially; article 2 0.3 article 1 length, with 4 microsetate setae with subterminal setule medially; article 3 0.6 article 2 length, with microsetate seta with subterminal setule medially, simple seta laterally, terminal seta with subterminal setule 4.75 article 3 length. Uropod exopod subequal to length of endopod; article 1 0.2 article 2 length, unarmed; article 2 with 9 microsetate and 2 simple setae medially, 7 simple and 2 microsetate setae laterally, terminal seta with subterminal setule 0.8 article 2 length (Fig. 11H).

Etymology. The species is named *scabridus*, from the Latin, in reference to the rough and rugged carapace.

Depth. 165–176 m.

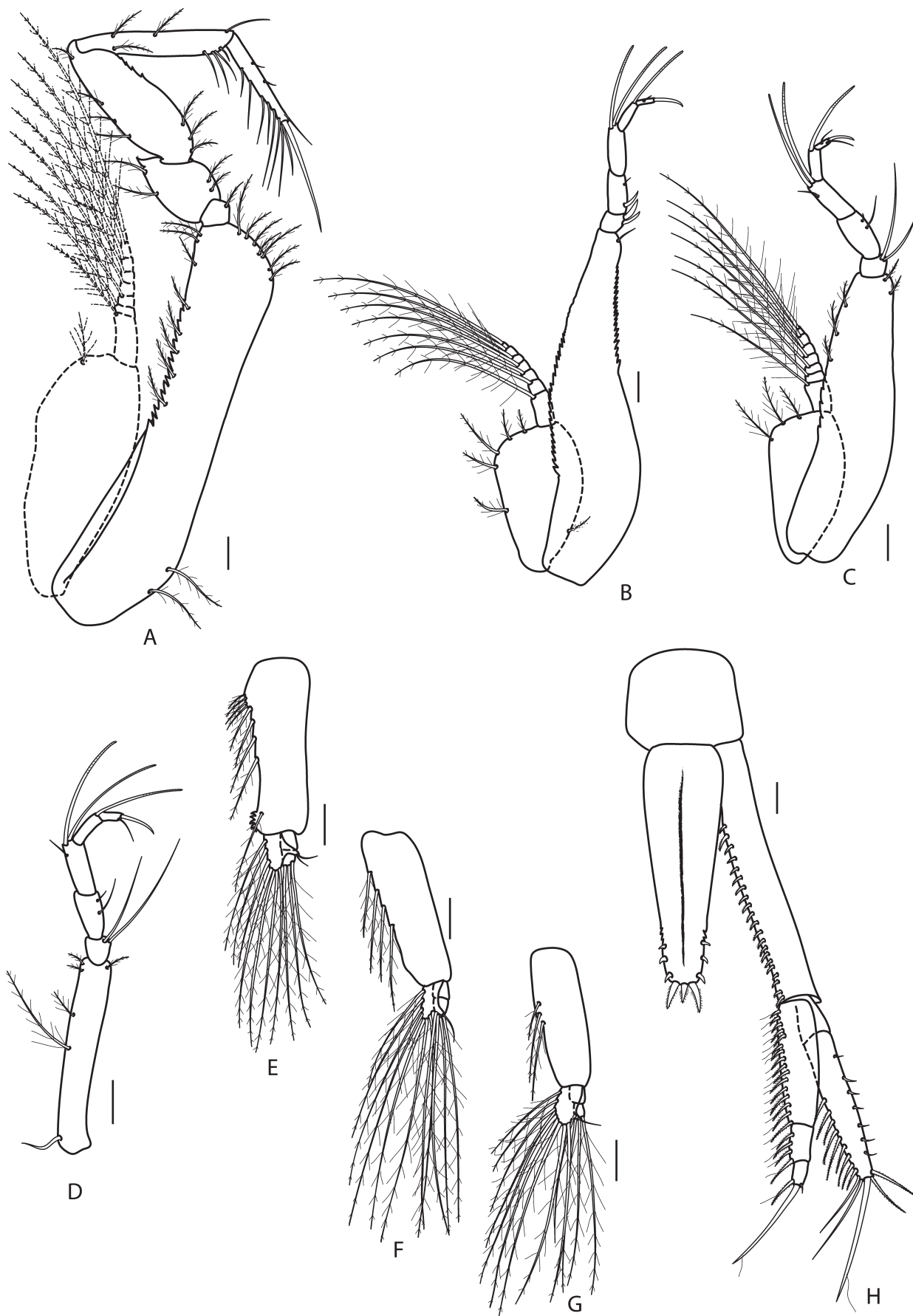


FIGURE 11. *Brachylamprops scabridus* n. sp. Paratype adult male AM P101486, A, pereopod 1; B, pereopod 3; C, pereopod 4; D, pereopod 5; E, pleopod 1; F, pleopod 2; G, pleopod 3; H, telson and uropods. Scale bars 0.1 mm.

Distribution. 151°E, 33°S, coast of New South Wales, Australia.

Remarks. *Brachylamprops scabridus* n. sp. is unique amongst the Lampropidae in the short, rugged carapace.

Chalarostylis Norman, 1879

Chalarostylis Norman, 1879: 65.

Dasylamprops Reyss, 1978b: 82.

Type species. *Chalarostylis elegans* Norman, 1879, by monotypy.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella unequal, accessory flagellum shorter than main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 robust, with group of long, stout setae on dactylus. Pereopod 5 longer than basis of pereopod 4. Telson short, less than 0.7 length of peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. Male with short antenna, not extending past pereon, with or without penial lobes, with 3 pairs of pleopods.

Species. *C. brenkei* (Mühlenhardt-Siegel, 2005), *C. bruunae* n. sp., *C. canadensis* (Vassilenko, 1988) *C. elegans* Norman, 1879, *C. guanchi* (Reyss, 1978b), *C. longisetae* (Corbera, 2006).

Remarks. *Chalarostylis* is a deep sea genus, and the first pereopod is frequently broken off at the basis/ischium joint. Specimens with the first pereopod broken may easily be confused with *Hemilamprops*, as also observed by Alberico *et al.* (2014). With the exception of *C. canadensis*, the accessory flagellum is much shorter than the main flagellum, which serves to differentiate this genus from *Hemilamprops*. It is possible that the incomplete specimens described as *Hemilamprops* sp. in Day (1978) represent another species of *Chalarostylis*, as the anterior margin of the carapace and the dorsal crest are spined, and the telson is less than 0.5 the length of the uropod peduncles.

The diagnoses of *Dasylamprops* and *Chalarostylis* shared the short telson and the accessory flagellum of the antennule much shorter than the main flagellum, unusual characteristics within the Lampropidae. The *Dasylamprops* diagnosis, also included a robust pereopod 1 with a group of stout setae on the dactylus, apparently differentiating it from *Chalarostylis*. However, the holotype material of *Chalarostylis elegans* has the first pereopods missing all articles distal of the basis, and none of the subsequently published records of *Chalarostylis* before 2007 included any additional description, suggesting the pereopod 1 was broken on all specimens, as is frequently encountered in cumaceans with long first pereopods, including many *Hemilamprops*, diastylids and gynodiastylids. Gerken & McCarthy (2007) redescribed both the holotype and an additional entire specimen of *Chalarostylis elegans*, which included a complete, robust pereopod 1 with a group of stout setae on the dactylus. With a complete overlap of the generic diagnoses (short telson, short accessory flagellum, robust pereopod 1), it became clear that *Chalarostylis* and *Dasylamprops* were synonymous, and *Dasylamprops* was the junior synonym (Gerken & McCarthy 2007).

Alberico *et al.* (2014) suggested that the steep angle of the articulation between the merus and carpus of maxilliped 1 be added to the generic diagnosis. However, there is much variation across the Lampropidae in this angle within genera (where it has been observed), therefore it does not seem at present to be of generic value.

Key to the species *Chalarostylis*

1. Carapace, pereonites and pleonites all with long setae *C. guanchi*
- Carapace with setae on anterior third, or none 2
2. Dorsal crest serrated *C. elegans*
- Dorsal crest smooth or entire 3
3. Antenna accessory flagellum longer than first two articles of main flagellum *C. canadensis*
- Antenna accessory flagellum shorter than first two articles of main flagellum 4
4. Uropod peduncle with 9 setae medially; antennule accessory flagellum shorter than first article of main flagellum *C. longisetae*
- Uropod peduncle with more than 10 setae medially; antennule accessory flagellum equal or longer than first article of main fla-

gellum	5
5. Antennule accessory flagellum equal to or barely longer than first article of main flagellum.....	<i>C. bruunae</i>
- Antennule accessory flagellum nearly reaching end of second article of main flagellum	<i>C. brenkei</i> .

***Chalarostylis brenkei* (Mühlenhardt-Siegel, 2005)**

Hemilamprops brenkei Mühlenhardt-Siegel, 2005: 117, fig. 3.

Chalarostylis brenkei.—Alberico *et al.*, 2014: 323, figs 1–3.

Type material. Holotype: ZMH K 40,418, male. Paratype: ZMH K 40,419, female. Angola Basin, 16°14.3'S, 5°26.8'E. Not seen.

Diagnosis. Carapace with setae, pereon and pleon without setae. Carapace dorsal crest entire, with scattered setae anteriorly. Pereopod 1 without serrate carinae on carpus and propodus. Telson 1.8 length of pleonite 6, telson with 8–9 lateral setae and 3 terminal setae, terminal setae longer than later lateral setae. Telson 0.6 length of uropod peduncles. Uropod exopod article 1 1.1 length of article 2. *Adult male*

antennal flagellum moderate, reaching to end of pereon. Small penial lobes present, as genital papillae. Telson with 3–7 pairs of lateral setae.

Depth. 5125–5389 m.

Distribution. Angola Basin, 16°43'S, 5°26.8'E.

Remarks. The most similar species is *Chalarostylis bruunae*, which can be differentiated by the antennule accessory flagellum. In *C. brenkei*, the antennule accessory flagellum reaches to at or near the end of the second article of the main flagellum, while in *C. bruunae* the accessory flagellum only reaches to at or near the end of the first article of the main flagellum.

***Chalarostylis bruunae* n. sp.**

(Figs 12–13)

Type material. Holotype subadult female, USNM 389843, 29°20'S, 36°26'E, 5000 m, collected by R/V Anton Bruun.

Diagnosis. Carapace with setae, pereon and pleon without setae. Carapace dorsal crest without teeth or serrations, setae on frontal lobe and pseudorostral lobes. Pereopod 1 without serrate carinae on carpus and propodus. Telson 2.0 length of pleonite 6, telson with 8–9 lateral setae and 3 terminal setae, lateral and terminal setae subequal. *Adult male* unknown.

Description. Holotype subadult female, USNM 389843. Subadult female, 6.3 mm. Carapace smooth, with setae on frontal lobe and pseudorostral lobes, elevated dorsally posteriorly, antennal notch absent; pseudorostral lobes 0.4 carapace total length, serrated anteriorly; eyelobe 0.03 carapace length, no lenses; carapace longer than pereonites together; pereonite 1 exposed dorsally, not visible laterally (Fig. 12A, B).

Antennule peduncle article 1 longest, margin with teeth, produced as lobe distally, lobe with 2 pedunculate setae, with 14 simple setae; article 2 with 3 pedunculate and 12 simple setae; article 3 shortest, with 1 simple seta; main flagellum of 4 articles, with 2 simple and 2 aesthetasc setae terminally; accessory flagellum small, barely longer than first article of main flagellum, of 2 articles, with simple setae terminally (Fig. 12C).

Antenna rudimentary.

Mandible, maxillule, maxilla, maxilliped 1 not examined.

Maxilliped 2 basis shorter than other articles together, with 1 plumose and 2 pappose setae; ischium unarmed; merus with 1 plumose and 1 pappose setae; carpus with 1 pappose seta distally and 5 pappose setae medially; propodus with 6 pappose setae medially and 1 pappose seta distally; dactylus with 4 simple setae terminally (Fig. 12D).

Maxilliped 3 basis subequal to all other articles together, expanded distally, distal corner with 4 plumose setae, medial margin with 6 pappose setae; ischium unarmed; merus with 2 plumose setae distally and 4 plumose setae medially; carpus with 2 plumose setae laterally, 6 plumose and 1 simple setae medially; propodus with 4 simple setae laterally, 3 pappose setae medially; dactylus with 3 simple setae terminally; exopod as long as basis, basal article with plumose setae, flagellum with plumo-annulate setae (Fig. 13A).

Pereopod 1 basis 0.9 length of merus, with 2 pappose setae; ischium broader than long, with 1 plumose and 1 pappose setae; merus with 9 pappose and 1 simple setae; carpus 0.4 merus length, unarmed; propodus 1.5 carpus length, with 1 simple seta; dactylus equal to carpus, with 7 stout simple setae distally; exopod longer than basis and ischium together, basal article with pappose setae, flagellum with plumo-annulate setae (Fig. 13B).

Pereopod 2 basis longer than next 2 articles together, with 4 pappose and 4 simple setae medially, 6 pappose setae laterally; ischium with 1 pappose seta; merus with 1 stout micro serrate seta and 2 pappose setae distally; carpus 0.8 basis length, with 8 stout micro serrate setae medially and 2 pappose setae laterally; propodus with 3 simple setae; dactylus 0.3 basis length, with 1 pappose setae and 2 simple setae terminally; exopod longer than basis and ischium together, basal article with pappose setae, flagellum with plumo-annulate setae (Fig. 13C).

Pereopod 3 basis longer than all other articles together, with 9 plumose setae; ischium with 1 plumose and 2 annulate setae; merus with 1 annulate seta; carpus with 1 simple, 3 plumose and 2 annulate setae; propodus with 1 annulate seta; dactylus with 2 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles, with simple setae terminally (Fig. 13D).

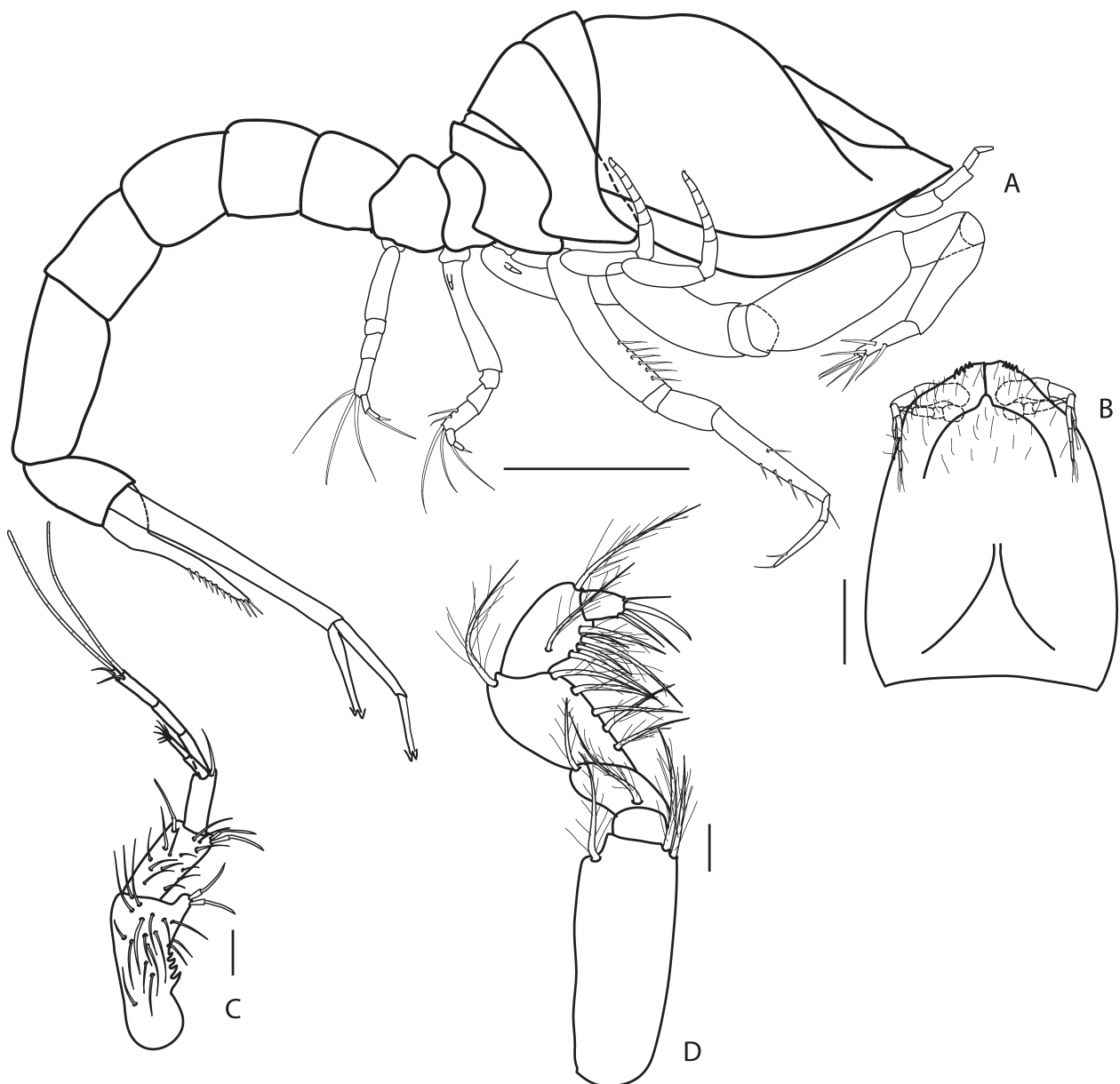


FIGURE 12. *Chalarostylis bruunae* n. sp. Holotype female USNM 389843 A, side view; B, dorsal view of carapace; C, antennule; D, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

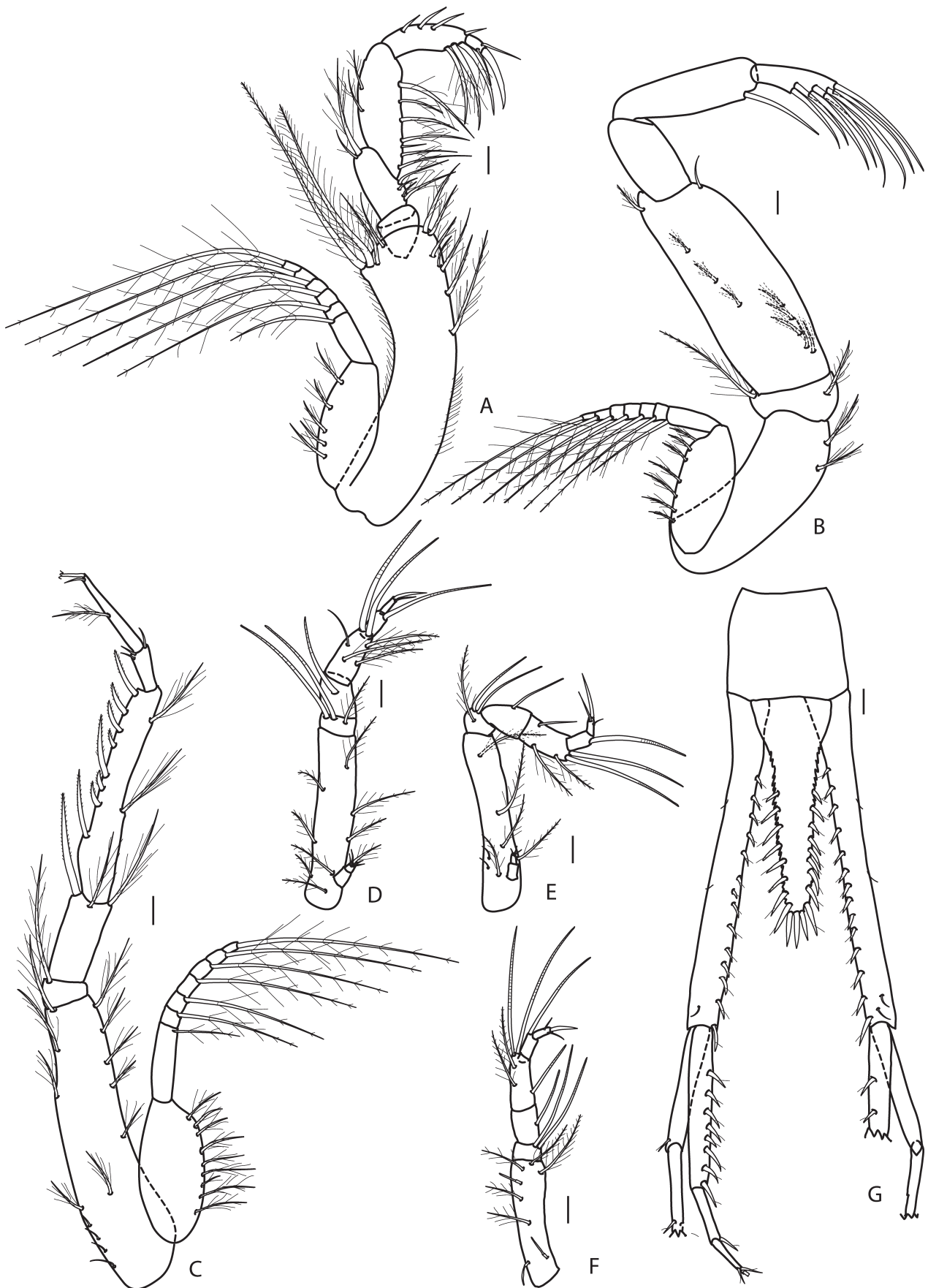


FIGURE 13. *Chalarostylis bruunae* n. sp. Holotype female USNM 389843 A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.

Pereopod 4 basis longer than all other articles together, with 5 plumose and 2 simple setae; ischium with 1 plumose and 2 annulate setae; merus with 1 annulate seta; carpus with 1 simple, 2 plumose and 2 annulate setae; propodus with 1 annulate seta; dactylus with 3 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles, with simple setae terminally (Fig. 13E).

Pereopod 5 basis as long as next 4 articles together, with 5 plumose and 3 pedunculate setae; ischium with 2 annulate setae; merus with 1 annulate seta; carpus with 3 annulate and 2 plumose setae; propodus with 1 annulate seta; dactylus with 3 simple setae terminally (Fig. 13F).

Telson twice length of pleonite 6, distinct post-anal narrowing, with 8–9 lateral setae with single subterminal setule, 3 simple terminal setae, subequal in length to lateral setae (Fig. 13G).

Uropod peduncles 3.2 length of pleonite 6, 1.6 length of telson, with 14 medial setae with single subterminal setule. Uropod endopod of 3 articles, 0.8 peduncle length; article 1 longer than articles 2 and 3 together, with 8 medial setae with single subterminal setule; article 2 1.1 length of article 3, with 1 medial seta with single subterminal setule; article 3 with 2 setae with subterminal setule, terminal seta broken. Uropod exopod broken (Fig. 13G).

Etymology. The species is named *bruunae* for the vessel that collected the specimen, the R/V Anton Bruun.

Depth. 5000 m.

Distribution. Deep western south Atlantic, 29°20'S, 36°26'E.

Remarks. The most similar species are *Chalarostylis longisetae* and *C. brenkei*, which can be differentiated by the antennule accessory flagellum and uropod peduncle setation. In *C. bruunae* the antennule accessory flagellum is equal to or longer than the first article of the main flagellum, and the uropod peduncle has 14 setae medially. In comparison, in *C. longisetus*, the antennule accessory flagellum is shorter than the first article of the main flagellum and the uropod peduncle has nine setae medially. In *C. brenkei*, the antennule accessory flagellum reaches nearly to the border of the second article of the main flagellum, and the uropod peduncles in the female have 19–20 setae medially.

***Chalarostylis canadensis* (Vassilenko, 1988)**

Hemilamprops canadensis Vassilenko, 1988: 945–949, figs 1–4.

Chalarostylis canadensis.—Alberico *et al.*, 2014: 324.

Type material. Holotype: ZIN 1/81139, female. Canada Basin, Arctic, 79°26'N, 127°39'E. Not seen.

Diagnosis. Carapace, pereon and pleon with no setae, anterior margin serrate. Carapace dorsal crest serrated. Pereopod 1 without serrate carinae on carpus and propodus. Telson with 4 pairs lateral setae, with 3 long terminal setae. *Adult male* antennal flagellum moderate, reaching past pereon but not to end of pleon. Telson with 5 pairs of lateral setae.

Depth. 2370–3550 m.

Distribution. Canada Basin, Arctic Ocean, 79–82°N, 127–129°W.

Remarks. This species is the most similar to *Hemilamprops*, in that the accessory flagellum is greater than 0.5 the length of the main flagellum and the telson is more than 0.5 the length of the uropod peduncles, although less than 0.7 the peduncle length. However, the robust pereopod 1 with a group of long setae on the dactylus is distinctly *Chalarostylis*, and not like the slender pereopod 1 found in *Hemilamprops*. The species can be distinguished from all other *Chalarostylis* by the combination of the serrate anterior margin of the carapace, the accessory flagellum more than 0.5 the length of the main flagellum, and the telson more than 0.5 the length of the uropod.

There is a discrepancy in the length of the male antenna in Vassilenko's figure (Vassilenko 1990). In Figure 3, the antenna is figured with the flagellum about 4.0 the length of the fifth peduncle article, similar to the proportions seen in *C. elegans*, but in the full body illustration (Fig. 1, Vassilenko 1988) the flagellum appears to be much longer, and it is possible that this is an artifact of the position of the specimen. The full body seems to suggest that the male antenna is longer than that seen in other *Chalarostylis* males, but the individual figure of the male antenna resembles the other *Chalarostylis* males in having a flagellum that is short, about 4.0 the length of peduncle article 5.

***Chalarostylis elegans* Norman, 1879**

Chalarostylis elegans Norman, 1879: 65.—Gerken & McCarthy, 2007: 150–153, figs 1–2.

Type material. Holotype: NHM 1911.11.8.6024, adult male. Off Rockall, Porcupine Bight.

Other material. Female, NHM 2006.1187; 2 adult males, MNHN CU-477; 1 subadult female, MNHN CU-459.

Diagnosis. Carapace, pereon and pleon with few or no setae. Carapace dorsal crest serrated. Pereopod 1 with serrate carinae on carpus and propodus. Telson with 3 pairs of lateral setae, with 3 terminal setae. *Adult male* antennule main flagellum article 1 with cluster of aesthetascs. Telson with 2 pairs of lateral setae.

Additional description. Male with pair of penial lobes.

Depth. 199–3178 m.

Distribution. Western North Atlantic, 34°20'–54°21.6'N, 4°50'–27°00.2'W.

Remarks. *Chalarostylis elegans* is similar to *C. guanchi*, but *C. guanchi* is covered with long setae on the carapace, pereon and pleon, while *C. elegans* has only a few setae on the anterior part of the carapace. In addition, in *C. elegans* the dorsal crest is serrated while in *C. guanchi* the dorsal crest is entire.

***Chalarostylis guanchi* (Reyss, 1978b)**

Dasylamprops guanchi Reyss, 1978b.

Chalarostylis guanchi.—Gerken & McCarthy, 2007: 149.

Type material. Holotype: deposition unknown, male. Canary Islands, 27°14.9'N, 15°36.3'W. Not seen.

Diagnosis. Carapace, pereon and pleon with many setae. Carapace dorsal crest not serrated. Pereopod without serrate carinae on carpus and propodus. Telson with 6 pairs lateral setae, with 3 long terminal setae. *Adult male* unknown.

Depth. 2988 m.

Distribution. Canary Islands, 27°14.9'N, 15°36.3'W.

Remarks. The species is unique in the genus in having long setae covering the carapace, pereon and pleon.

***Chalarostylis longisetae* (Corbera, 2006)**

Hemilamprops longisetae Corbera, 2006: 148, fig. 3.

Chalarostylis longisetae.—Alberico *et al.*, 2014: 323.

Type material. Holotype: MNHN-Cu992, female. Paratype: MNHN-Cu993, adult male. New Caledonia, 21°0.0'S, 167°58.34'E.

Diagnosis. Carapace, pereon and pleon with few or no setae. Carapace dorsal crest not serrated. Pereopod 1 broken. Telson with 2 pairs lateral setae, with 3 long terminal setae, central seta longest. *Adult male* with cluster of aesthetascs on antennule main flagellum article 1.

Additional description. Male with pair of penial lobes.

Depth. 1820–1980 m.

Distribution. New Caledonia, 21°0.0'S, 167°58.34'E.

Remarks. This species is quite similar to the other known species of *Chalarostylis* in carapace shape, telson size, and male morphology, thus despite the missing pereopod 1, it can be assigned to *Chalarostylis* with reasonable confidence. The most similar species is *C. bruunae*; however, in *C. bruunae* the antennule accessory flagellum is equal to or longer than the first article of the main flagellum and there are 14 setae medially on the uropod peduncle, while in *C. longisetus* the antennule accessory flagellum is shorter than the first article of the main flagellum and there are only nine setae medially on the uropod peduncle.

***Doieolamprops* n. gen.**

Type species. *Doieolamprops confundus*

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe absent, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson moderate, 2/3 length of uropod peduncles. Uropod endopod of 2 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with rudimentary exopod on pereopod 2, rudimentary exopods on pereopods 3–4, with 1 pair of pleopods. *Male* unknown.

Etymology. From the greek *doie*, meaning uncertain, in combination with *lamprops* from the family name. The name is in reference to the uncertain nature of this genus, as it is represented by a single specimen, yet that single specimen has characteristics that do not allow it to be placed within any other lampropid genus without diluting the generic diagnosis. As noted by Băcescu (1972), female pleopods within a species may vary in their state of development. Gender masculine.

Species. *Doieolamprops confundus* n. sp.

Remarks. This genus is unique in the combination of the female with a pair of pleopods and the uropod endopod of two articles.

***Doieolamprops confundus* n. sp.**

(Figs 14–15)

Type material. Holotype: subadult female, AM P66461, 33°42'S, 151°54'E, 466 m, north-east of Long Reef, New South Wales, Australia, collected by FRV “Kapala” 19 December 1985.

Description. Holotype subadult female, AM P66461, 4.9 mm.

Carapace unornamented; pseudorostral lobes 0.3 carapace length; eyelobe absent; carapace 2.2 length of pereonites together (Fig. 14A).

Antennule peduncle article 1 equal to articles 2 and 3 together, with 3 simple setae; article 2 0.6 article 1 length, with 3 simple setae; article 3 0.6 article 2 length, with simple seta; main flagellum of 3 articles, 2.1 length of article 3, with 2 aesthetascs; accessory flagellum of 3 articles, equal to main flagellum length, with 6 simple setae (Fig. 14B).

Antenna, mandible not figured.

Maxillule with 2 endites; outer endite with 1 microserrate and 11 simple setae; inner endite with 1 simple, 1 dentate and 2 pappose setae; palp with 2 setae (Fig. 14C).

Maxilla with 3 endites; broad endite distal margin with pappose and simple setae, medial row of 2 setae, medial margin with 2 simple setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 5 microserrate setae terminally; both narrow endites extending to distal margin of broad endite (Fig. 14D).

Maxilliped 1 basis produced medially as broad lobe, distal margin with 5 simple setae, 2 hook setae medially, with row of 7 pappose setae; ischium absent; merus with pappose seta laterally; carpus 2.1 merus length, with 4 simple, 1 pappose and 5 comb setae medially, pappose seta laterally; propodus 0.6 carpus length, with 4 simple and 2 pappose setae; dactylus 0.4 propodus length, with 4 simple setae (Fig. 14E).

Maxilliped 2 basis broken, with 3 plumose setae distally; ischium unarmed; merus 7.5 ischium length, with 2 pappose setae medially, pappose seta laterally; carpus 2.1 merus length, with 4 simple setae medially, pappose seta laterally; propodus 0.8 carpus length, with 2 simple, 1 plumose and 3 pappose setae; dactylus 0.7 propodus length, with 2 simple setae (Fig. 14F).

Maxilliped 3 basis 1.2 all other articles together, with 2 pappose setae; ischium 0.04 basis length, unarmed; merus 3.3 ischium length, with 3 pappose setae; carpus 2.9 merus length, with 1 simple and 5 plumose setae; propodus 0.4 carpus length, with 4 simple and 2 plumose setae; dactylus 0.5 propodus length, with 2 simple setae terminally; exopod equal to basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 14G).

Pereopod 1 basis equal to all other articles together, with 3 simple and 1 plumose setae; ischium 0.04 basis length, unarmed; merus 4.3 ischium length, with 2 simple setae; carpus 1.7 merus length, with 5 simple and 1 microserrate setae; propodus 0.9 carpus length, with 3 simple and 1 microserrate setae; dactylus 0.7 propodus

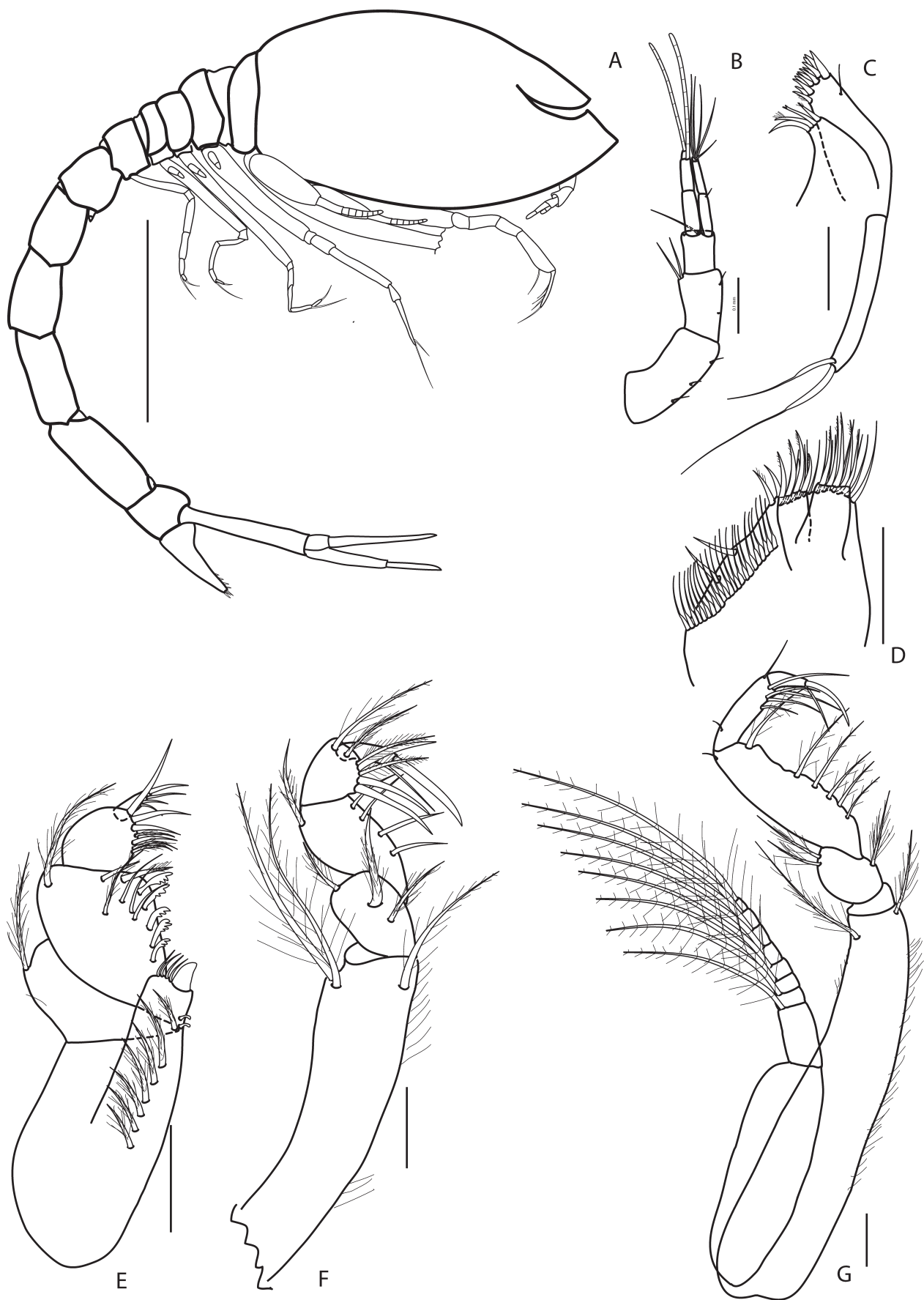


FIGURE 14. *Doeiolamprops confundus* **n. sp.** Holotype subadult female AM P66461 A, side view; B, antennule; C, maxillule; D, maxilla; E, maxilliped 1; F, maxilliped 2; G, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.

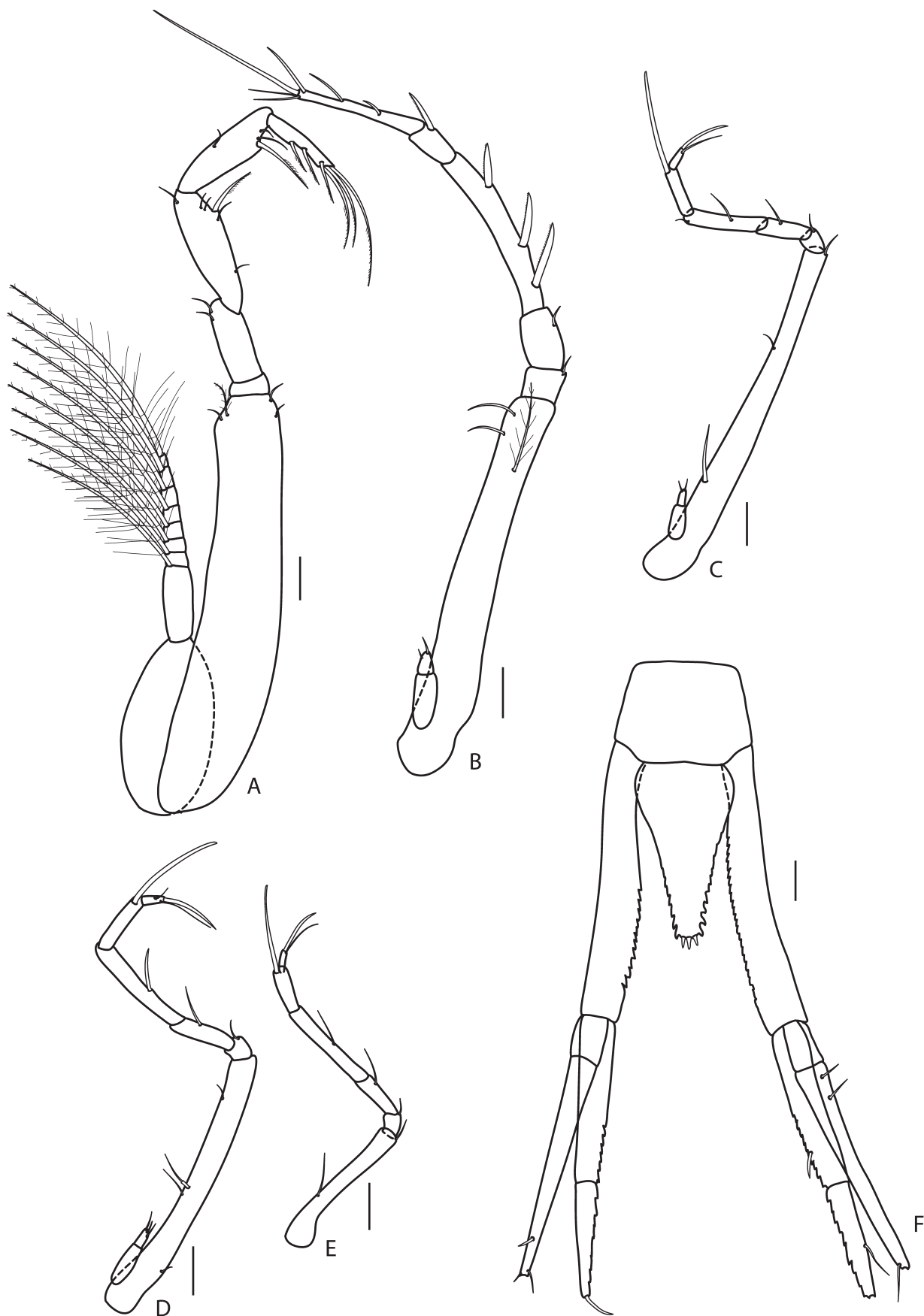


FIGURE 15. *Doeiolamprops confundus* n. sp. Holotype subadult female AM P66461 A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

length, with 3 microsetate setae and 3 microsetate setae terminally; exopod 0.9 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 15A).

Pereopod 2 basis equal to all other articles together, with 2 simple and 1 plumose setae; ischium 0.07 basis length, with simple seta; merus 2.0 ischium length, with simple seta; carpus 3.0 merus length, with 3 microsetate setae; propodus 0.2 carpus length, with microsetate seta; dactylus 3.1 propodus length, with 3 simple setae and 3 simple setae terminally; exopod rudimentary, 0.2 basis length, of 2 articles with 2 simple setae (Fig. 15B).

Pereopod 3 basis 1.7 all other articles together, with 3 simple setae; ischium 0.6 basis length, with simple seta; merus 2.0 ischium length, with simple seta; carpus 1.8 merus length, with 2 simple setae; propodus 0.6 carpus length, with simple seta; dactylus 0.4 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles with 2 simple setae (Fig. 15C).

Pereopod 4 basis 1.1 all other articles together, with 3 simple and 1 pedunculate setae; ischium 0.06 basis length, with simple seta; merus 3.3 ischium length, with simple seta; carpus 1.9 merus length, with simple seta; propodus 0.6 carpus length, with simple seta; dactylus 0.3 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.2 basis length, of 2 articles with 3 simple setae (Fig. 15D).

Pereopod 5 basis 0.7 all other articles together, with simple seta; ischium 0.1 basis length, with simple seta; merus 2.3 ischium length, with simple seta; carpus 2.6 merus length, with simple seta; propodus 0.4 carpus length, with simple seta; dactylus 2.7 propodus length, with 2 simple setae terminally (Fig. 15E).

Telson 1.8 length of pleonite 6, without lateral setae, lateral margins serrate distally, 3 short terminal setae (Fig. 15F).

Uropod peduncles 2.8 pleonite 6 length, 1.6 telson length, medial margins serrate. Uropod endopod of 2 articles, equal to peduncle length; article 1 1.5 article 2 length, unarmed, medial margin serrate; article 2 0.7 article 1 length, medial margin serrate, terminal seta simple, 0.25 article 2 length. Uropod exopod equal to length of endopod; article 1 0.2 length of article 2, unarmed; article 2 5.1 article 1 length, with 2–3 simple setae, terminal seta broken (Fig. 15F).

Etymology. *Confundus*, because of the confusing nature of the species, as it has characteristics similar to both *Platysympus* and *Archaeocuma*, as well as a mixture of female and male characteristics.

Depth. 466 m.

Distribution. New South Wales, Australia, 33°42'S, 151°54'E.

Remarks. The specimen described here is immature, and not pre-ovigerous, as there are no brood plates visible. However, the exopods on maxilliped 3 and pereopod 1 are fully developed while the pereopod 2 exopod is distinctly not developed and resembles the rudimentary exopods recorded for *Platysympus*, in which the exopod is reduced to 2 small articles with a few short setae terminally. The pereopod 3 and pereopod 4 exopods are rudimentary. The antenna was rudimentary and very small, showing no indication of the enlargement that would be expected in an immature male. With the combination of the exopod pattern being similar to that seen in *Platysympus* females and the lack of any development of the antenna, this specimen is not an immature male.

***Farragolamprops* n. gen.**

Type species. *Farragolamprops seminalis* n. sp.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt or acute. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Maxillule palp with 1 seta. Pereopod 1 slender and long. Pereopod 5 much shorter than pereopod 4 basis, of 6 articles. Telson more than 0.5 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with short antenna, extending to end of pereon, with penial lobes, with 3 pairs of pleopods.

Species. *Farragolamprops seminalis* n. sp., *F. spinacristatus* n. sp.

Etymology. The new genus is named *Farragolamprops* from the combination of the Latin *farrago* meaning medley or mixture, and the generic name *Lamprops*. The name refers to the mixture of characters present in this genus. Gender masculine.

Remarks. This genus exhibits a combination of characters that are found in *Watlingia* and *Stenotyphlops*. The

maxillule palp has a single seta, as is found in *Watlingia* and *Stenotyphlops*, and the adult male has penial lobes, as does *Watlingia*. However, in *Watlingia* the uropod endopod is of 2 articles, and in the new genus, the uropod endopod is of 3 articles. In *Stenotyphlops*, pereopod 5 is reduced to a two article filament, and in the new genus pereopod 5 is clearly of six articles and has similar proportions to pereopods 3–4, although it is much shorter than the basis of pereopod 4.

Key to the species of *Farragolamprops*

1. Carapace with multiple ridges dorsal of serrate marginal carina, ridges serrate in female, entire in male. . . . *F. seminalis* n. sp.
- Carapace without ridges dorsal of marginal carina. *F. spinacristatus* n. sp.

Farragolamprops seminalis n. sp.

(Figs 16–19)

Type material. Holotype: preparatory female, NIWA 93214, 43.80°S, 175.31°E, 418–422 m, Chatham Rise, 27 April 2007. Paratypes: preparatory female, dissected, NIWA 94874, collected with holotype; adult male, dissected, NIWA 94872, 42.62°S, 175.92°E, 1194–1199 m, Chatham Rise, 26 April 2007.

Diagnosis. Carapace with multiple serrate ridges dorsal of marginal carina; eyelobe with lenses. Telson terminal setae unequal, central seta short.

Description. Holotype preparatory female, NIWA 93214; paratype preparatory female, NIWA 94874.

Preparatory female, holotype 8.0 mm, paratype 8.0 mm. Carapace with 3 pairs of serrate ridges dorsal of serrate marginal carina, dorsal crest serrate, expanded dorsolaterally; pseudorostral lobes 0.4 carapace length, with serrate ridge anterior of eyelobe; eyelobe 0.06 carapace length, with 3 lenses; carapace 1.5 length of pereonites together. Pereonites with pair of serrate ridges dorsally. Pleonites 4 and 5 with dorsal serrations (Fig. 16A, B).

Antennule peduncle article 1 longer than articles 2 and 3 together, with 2 simple setae; article 2 0.6 article 1 length, with simple setae; article 3 0.6 article 2 length, with long simple setae; main flagellum of 4 articles, 1.1 peduncle article 1 length, with few simple setae and 2 aesthetascs; accessory flagellum of 3 articles, equal to main flagellum length, with simple setae terminally (Fig. 16C).

Antenna not examined.

Mandible navicular, with 11–13 microserrate setae medially, *lacinia mobilis* with 1 cusp (Fig. 16D).

Maxillule with 2 endites; outer endite with 11 stout setae; inner endite with 1 simple, 1 microserrate and 2 beak setae; palp with seta (Fig. 16E).

Maxilla with 3 endites; broad endite with distal row of simple setae, medial corner with microserrate and pappose setae, medial margin with row of pedunculate setae and 3 pappose setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 5 microserrate setae terminally; both narrow endites extending past distal margin of broad endite (Fig. 16F).

Maxilliped 1 basis produced as broad lobe medially, medial margin with row of pappose setae, distal margin with 4 simple and 1 stout setae; ischium absent; merus with pappose seta distally; carpus 1.3 merus length, with comb and pappose setae on medial face, pappose seta distally; propodus 0.7 carpus length, with 4 simple and 2 plumose setae; dactylus 0.6 propodus length, with 4 simple setae terminally (Fig. 16G).

Maxilliped 2 basis broken at base, with 3 plumose and 2 thickly plumose setae distally, margins lines with fine hairlike setae; ischium unarmed; merus 4.0 ischium length, with thickly plumose seta medially; carpus 2.3 merus length, with 6 plumose setae medially, distal plumose seta; propodus 0.5 carpus length, with 5 plumose setae, lateral margin serrate; dactylus 0.7 propodus length, with 3 simple setae terminally (Fig. 16H).

Maxilliped 3 basis equal to all other articles together, with plumose and pappose setae medially, distal corner with 3 plumose setae; ischium 0.04 basis length, unarmed; merus 4.0 ischium length, with 1 plumose and 1 pappose setae medially, 3 plumose setae distally; carpus 3.1 merus length, with plumose setae medially, 2 plumose setae distally; propodus 0.5 carpus length, with 6 plumose setae; dactylus 0.5 propodus length, with 2 simple setae terminally; exopod 0.9 basis length, basal article with 3 simple setae, flagellum with plumo-annulate setae (Fig. 17A).



FIGURE 16. *Farragolamprops seminalis* n. sp. Holotype preparatory female NIWA 93214, A, side view. Paratype preparatory female NIWA 94874, B, dorsal view; C, antennule; D, mandibles; E, maxillule; F, maxilla; G, maxilliped 1; H, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

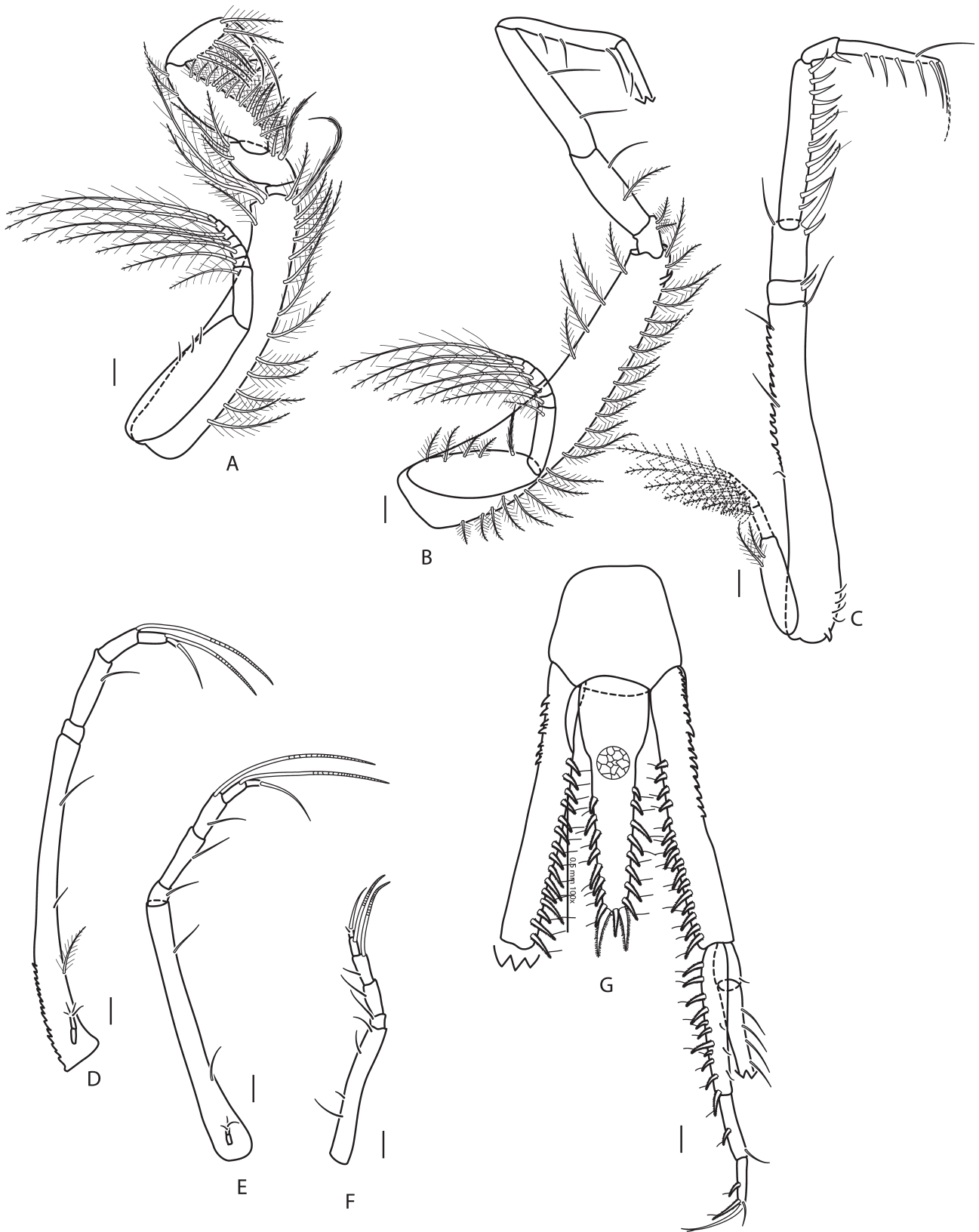


FIGURE 17. *Farragolamprops seminalis* n. sp. Paratype preparatory female NIWA 94874, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.

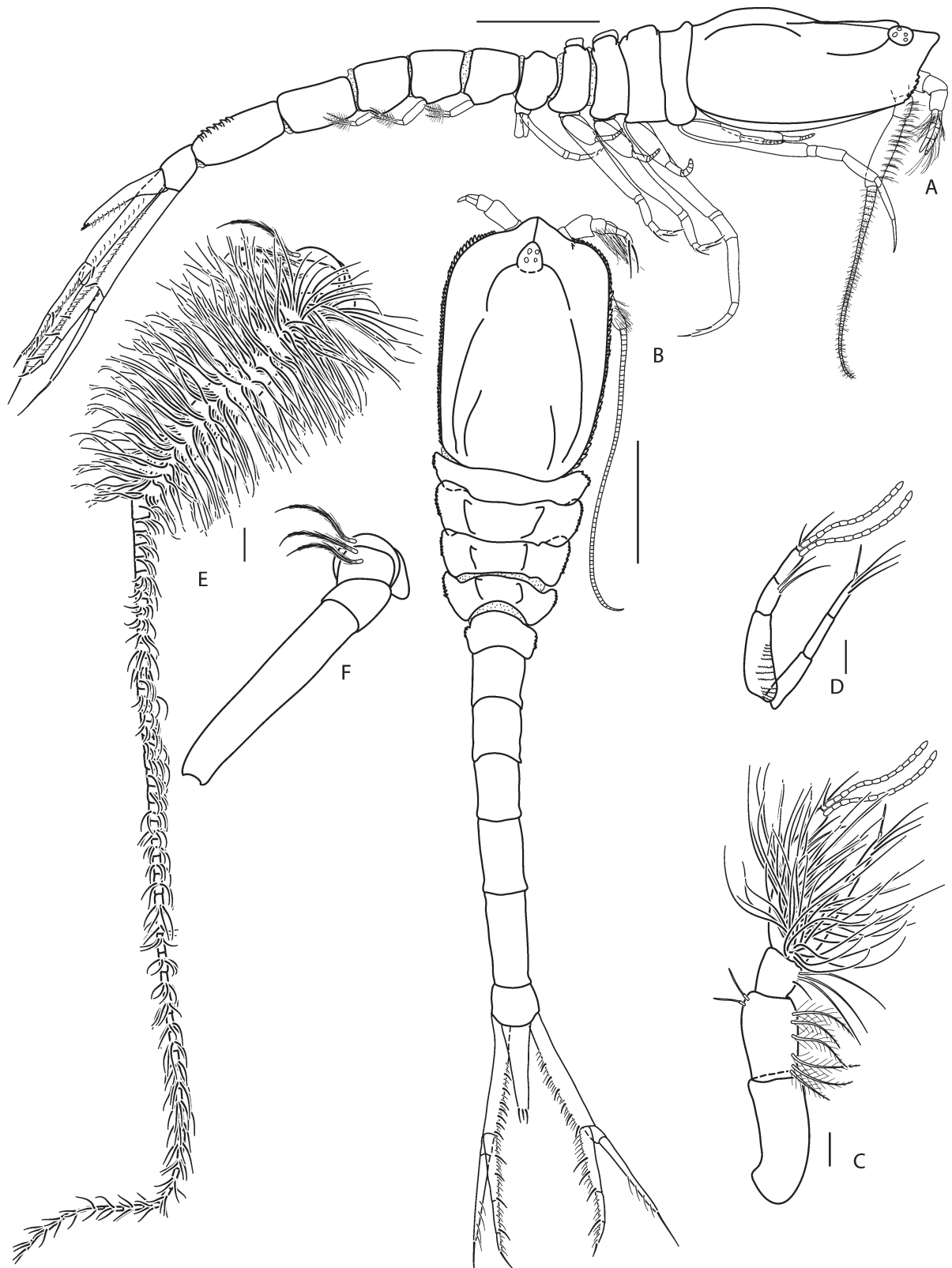


FIGURE 18. *Farragolamprops seminalis* n. sp. Paratype adult male NIWA 94872, A, side view; B, dorsal view; C, antennule; D, antennule flagella; E, antenna; F, antennal peduncle. Scale bars full body 1.0 mm, all others 0.1 mm.

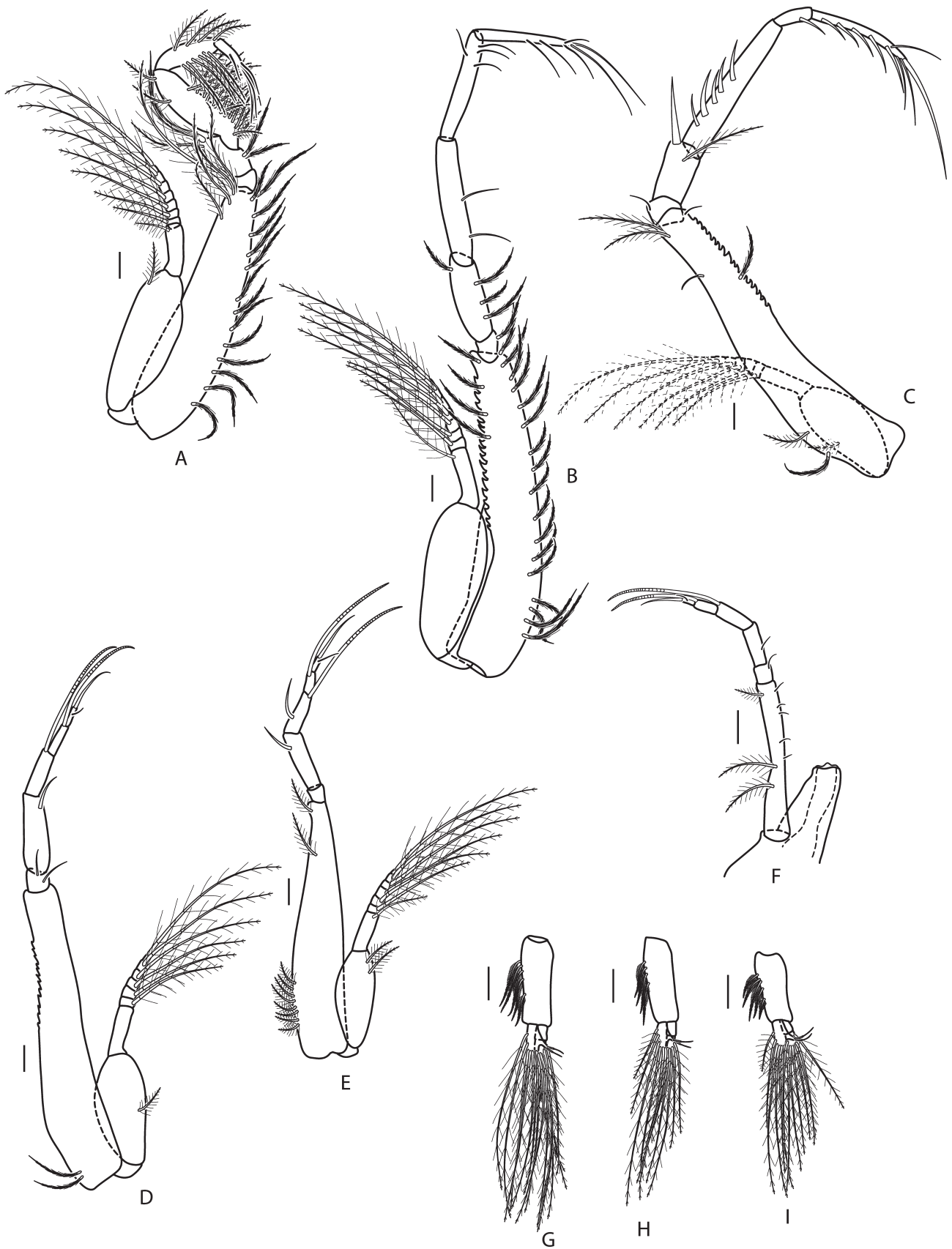


FIGURE 19. *Farragolamprops seminalis* n. sp. Paratype adult male NIWA 94872, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5 and penial lobe; G, pleopod 1; H, pleopod 2; I, pleopod 3. Scale bars 0.1 mm.

Pereopod 1 basis 0.9 next 4 articles together, margins with plumose setae, produced as tooth distally; ischium 0.07 basis length, with 2 plumose setae; merus 3.4 ischium length, with 1 simple and 1 plumose setae; carpus 1.7 merus length, with 2 simple setae; propodus 0.8 carpus length, with 3 simple setae; dactylus broken; exopod 0.7 basis length, basal article with 4 simple and 1 pappose setae, flagellum with plumo-annulate setae (Fig. 16B).

Pereopod 2 basis 0.9 all other articles together, with 3 simple setae, margin serrate distally, produced as single tooth proximally; ischium 0.06 basis length, with 2 simple setae; merus 2.5 ischium length, with 2 stout and 1 slender simple setae; carpus 3.3 merus length, with 10 simple and 2 microsetate with single subterminal setule setae; propodus 0.2 carpus length, with simple seta; dactylus 3.3 propodus length, with 7 simple setae and simple seta terminally; exopod 0.5 basis length, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 16C).

Pereopod 3 basis 2.0 all other articles together, with 2 simple and 1 plumose setae, margin serrate proximally; ischium 0.05 basis length, unarmed; merus 4.7 ischium length, with simple seta; carpus 0.6 merus length, with annulate seta; propodus 0.6 carpus length, with annulate seta; dactylus 0.4 propodus length, with simple seta terminally; exopod rudimentary, 0.08 basis length, of 2 articles with 4 simple setae (Fig. 17D).

Pereopod 4 basis 1.6 all other articles together, with 2 simple setae; ischium 0.08 basis length, with simple seta; merus 3.0 ischium length, with simple seta; carpus 0.7 merus length, with 1 simple and 1 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.6 propodus length, with simple seta terminally; exopod rudimentary, 0.06 basis length, of 2 articles with 3 simple setae (Fig. 17E).

Pereopod 5 basis 1.4 all other articles together, with 4 simple setae; ischium 0.1 basis length, with simple seta; merus 2.0 ischium length, with simple seta; carpus 1/0 merus length, with 1 simple and 1 annulate setae; propodus 0.5 carpus length, with annulate seta; dactylus 0.3 propodus length, with simple seta terminally (Fig. 17F).

Telson 2.0 length of pleonite 6, with 8 microsetate with single subterminal setule setae laterally, 3 microsetate setae terminally, central seta short (Fig. 17G).

Uropod peduncles 2.4 pleonite 6 length, 1.2 telson length, with 15–16 microsetate with single subterminal setule setae medially. Uropod endopod of 3 articles, subequal to peduncle length; article 1 1.3 articles 2 and 3 together, with 11 microsetate with single subterminal setule setae medially, few simple setae laterally; article 2 0.4 article 1 length, with microsetate with single subterminal setule seta medially; article 3 0.7 article 2 length, with 2 microsetate with single subterminal setule setae medially, terminal seta with single subterminal setule. Uropod exopod of 2 articles, broken (Fig. 17G).

Paratype adult male, NIWA 94872.

Adult male, 6.7 mm. Carapace with 2 pairs of entire ridges dorsal of serrate marginal carina, dorsolateral expansion, dorsal crest entire; pseudorostral lobes 0.4 carapace length, no ridges; eyelobe 0.1 carapace length, with 4 lenses; carapace 1.4 length of pereonites together. Pereonites with pair of entire dorsal ridges. Pleonite 5 with dorsal serrations (Fig. 18A, B).

Antennule peduncle article 1 equal to articles 2 and 3 together, unarmed; article 2 0.7 article 1 length, with 6 plumose and 2 pedunculate setae; article 3 0.6 article 2 length, with few simple setae; main flagellum of 4 articles, with simple setae on article 1, few simple setae on other articles, 2 aesthetascs terminally; accessory flagellum of 3 articles, 0.9 main flagellum length, with simple setae terminally (Fig. 18C, D).

Antenna extending to posterior border of pereonite 5; peduncle of 5 articles, with pappose setae; articles 4–5 with ranks of setae, completely circling articles; flagellum with several short setae on each article (Fig. 18 E, F).

Maxilliped 3 basis 1.1 all other articles together, with pappose setae medially, 4 plumose setae distally; ischium 0.06 basis length, unarmed; merus 2.0 ischium length, with 2 pappose setae medially, 1 plumose and 1 pappose setae distally; carpus 3.3 merus length, with plumose setae medially, 2 plumose setae laterally; propodus 0.6 carpus length, with many plumose setae medially and laterally; dactylus 0.6 propodus length, with 4 simple setae terminally; exopod 0.9 basis length, basal article with plumose seta, flagellum with plumo-annulate setae (Fig. 19A).

Pereopod 1 basis 0.7 all other articles together, margin serrate, with pappose setae on margins; ischium 0.08 basis length, with pappose seta; merus 3.0 ischium length, with 4 pappose setae; carpus 0.6 merus length, with 2 simple setae; propodus 0.9 carpus length, with 4 simple setae; dactylus 0.9 propodus length, with 4 simple setae and 2 simple setae terminally; exopod 0.9 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 19B).

Pereopod 2 basis 0.9 all other articles together, margin serrate distally, with 1 simple, 2 pappose and 3 plumose

setae; ischium 0.06 basis length, with simple seta; merus 2.8 ischium length, with 1 stout and 1 plumose setae; carpus 2.7 merus length, with 5 stout setae; propodus 0.2 carpus length, with simple seta; dactylus 3.0 propodus length, with 7 simple setae and 3 simple setae terminally; exopod 0.6 basis length, basal article with plumose seta, flagellum with plumo-annulate setae (Fig. 19C).

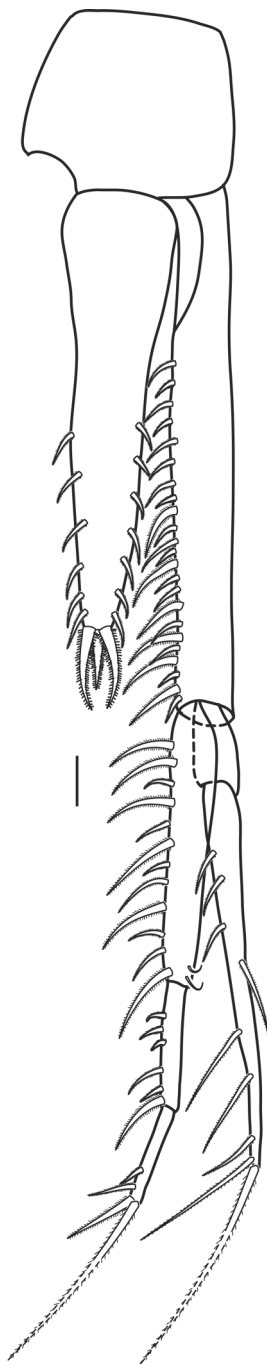


FIGURE 20. *Farragolamprops seminalis* n. sp. Paratype adult male NIWA 94872, A, telson and uropods. Scale bars 0.1 mm.

Pereopod 3 basis 1.5 all other articles together, margin serrate sitally, with 2 pappose setae; ischium 0.07 basis length, with 2 simple setae; merus 4.0 ischium length, with simple seta; carpus 0.6 merus length, with annulate seta; propodus 0.7 carpus length, with annulate seta; dactylus 0.7 propodus length, with simple seta and simple seta terminally; exopod 0.7 basis length, basal article with plumose seta, flagellum with plumo-annulate setae (Fig. 19D).

Pereopod 4 basis 1.6 all other articles together, with 10 plumose setae; ischium 0.06 basis length, unarmed; merus 4.0 ischium length, with simple seta; carpus 0.8 merus length, with 1 simple and 1 annulate setae; propodus

0.6 carpus length, with annulate seta; dactylus 0.6 propodus length, with simple seta and simple seta terminally; exopod 0.7 basis length, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 19E).

Pereopod 5 basis 1.2 all other articles together, with 3 plumose setae and fine hair-like setae; ischium 0.1 basis length, with simple seta; merus 2.7 ischium length, with simple seta; carpus 0.9 merus length, with annulate seta; propodus 0.7 carpus length, with annulate seta; dactylus 0.6 propodus length, with simple seta and simple seta terminally (Fig. 19F).

Penial lobe 0.6 length of pereopod 5 basis, 2.0 width of pereopod 5 basis (Fig. 19F).

Pleopod 1 biramous, medial ramus uniarticulate, lateral ramus biarticulate, with long plumo-annulate setae (Fig. 19G).

Pleopod 2 basal article shorter than pleopod 1 basal article (Fig. 19H).

Pleopod 3 basal article shorter than pleopod 2 basal article (Fig. 19I).

Telson 2.5 length of pleonite 6, with 6–7 microsetate lateral setae, 3 microsetate terminal setae, central seta short (Fig. 20).

Uropod peduncles 2.9 pleonite 6 length, 1.2 telson length. Uropod endopod of 3 articles, 0.9 peduncle length; article 1 135 length of articles 2 and 3 together, with 12 microsetate setae medially, simple seta laterally; article 2 0.4 article 1 length, with 6 microsetate setae medially; article 3 0.8 article 2 length, with 3 microsetate setae medially, terminal seta microsetate. Uropod exopod 0.9 length of endopod; article 1 0.2 article 2 length, unarmed; article 2 with 8 microsetate setae, terminal seta microsetate (Fig. 20).

Etymology. The name comes from the Latin *seminalis*, meaning seed, alluding to the shape of the carapace.

Depth. 418–1199 m.

Distribution. Chatham Rise, New Zealand, 34.80–42.62°S, 175.31–175.92°E.

Remarks. *Farragolamprops seminalis* is readily distinguishable from the other species in the genus, *F. spinacristatus*, by the carapace and the telson terminal setae. In *F. seminalis* there are multiple ridges dorsal of the marginal carina, serrate in the female and entire in the male, while in *F. spinacristatus* there are no ridges dorsal of the marginal carina. In *F. seminalis* the three telson terminal setae are unequal, with the central seta short, while in *F. spinacristatus* the three telson terminal setae are equal in length.

***Farragolamprops spinacristatus* n. sp.**

(Figs 21–22)

Type material. Holotype: subadult female, NIWA 45703, 45.99°W, 178.99°E, 530 m, Chatham Rise, 24 April 2007. Paratype: ovigerous female, dissected, NIWA 45704, 40.88°S, 170.85°E, 534 m, Challenger Plateau, 6 June 2007.

Other material. Subadult female, NIWA 45705, Chatham Rise, 43.29°S, 175.44°W, 644 m, 14 April 2007. Manca 2, NIWA 70519, 44.48°S, 177.14°E, 1235–1239 m, Chatham Rise, 6 April 2007.

Diagnosis. Carapace without ridges dorsal of marginal carina, with distinct spines on dorsal crest of frontal lobe; eyelobe without lenses. Telson terminal setae equal in length.

Description. Holotype subadult female, NIWA 45703.

Subadult female, 7.1 mm. Carapace dorsoventrally flattened, with posterior dorsolateral branchial expansion, marginal carina with hyaline fringe, anterior dorsal crest produced as large spines; pseudorostral lobes 0.4 carapace length, pointed and upturned in lateral view; eyelobe 0.06 carapace length, no lenses; carapace 1.4 length of pereonites together (Fig. 35A, B).

Paratype ovigerous female, NIWA 45704.

Ovigerous female, broken.

Antennule peduncle article 1 equal to articles 2 and 3 together, margins serrate, with 5 simple setae; article 2 0.7 article 1 length, margins serrate, with many simple and 1 plumose setae; article 3 0.5 article 2 length, margins serrate, with many simple and 3 plumose setae; main flagellum of 5 articles, 1.25 length of peduncle article 1, with simple setae, with 2 aesthetasc, 2 plumose and 2 simple setae terminally; accessory flagellum of 2 articles, as long as main flagellum, with simple and 1 plumose setae (Fig. 21C).

Antenna of 4 articles; article 1 with 2 pappose setae; article 2 with 1 pappose seta; article 3 with spines, no setae; article 4 2.0 article 3 length, with simple and pedunculate setae terminally (Fig. 21D).

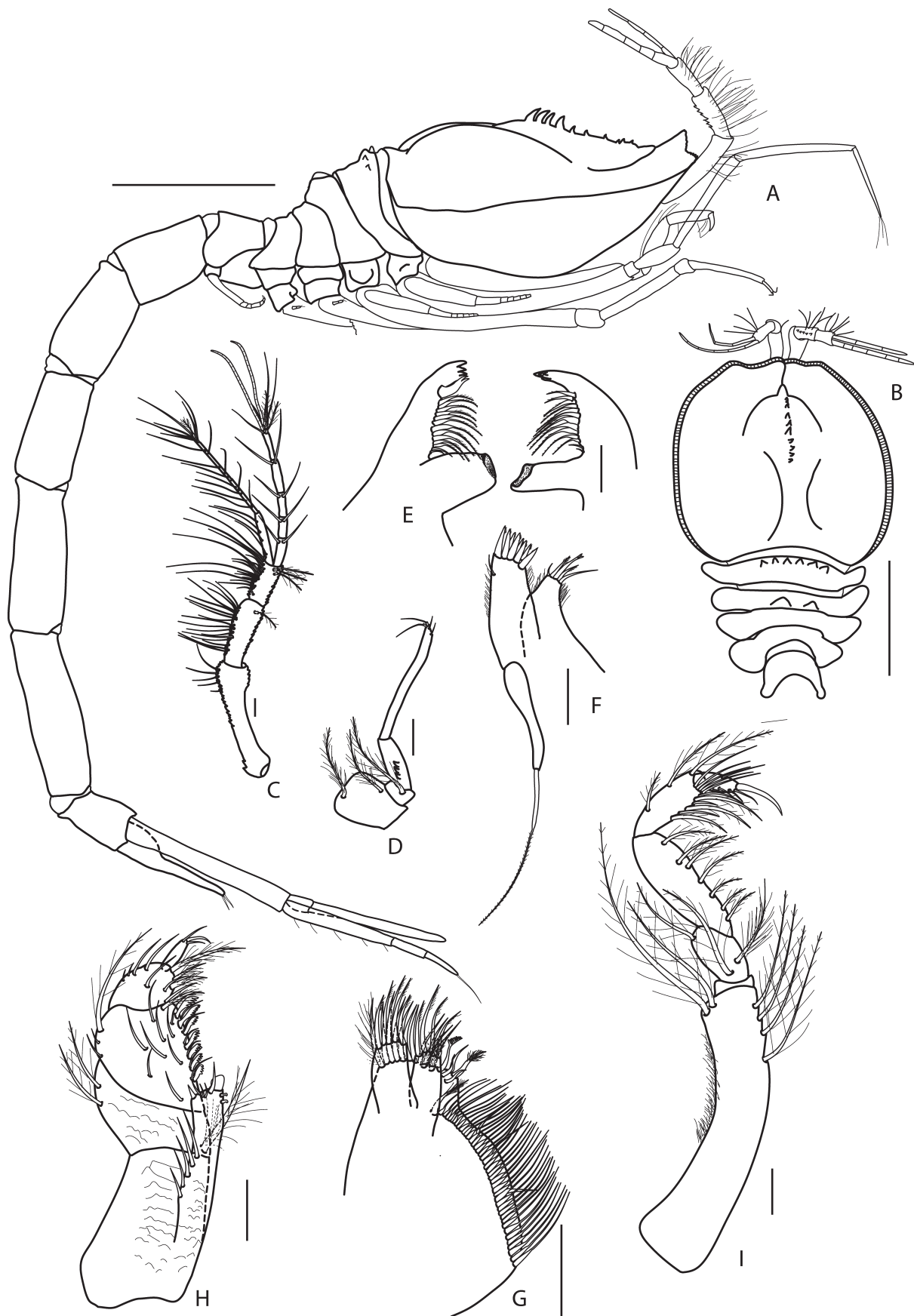


FIGURE 21. *Farragolamprops spinacristatus* n. sp. Holotype subadult female NIWA 45703, A, side view; B, dorsal view. Paratype subadult female NIWA 45704, C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

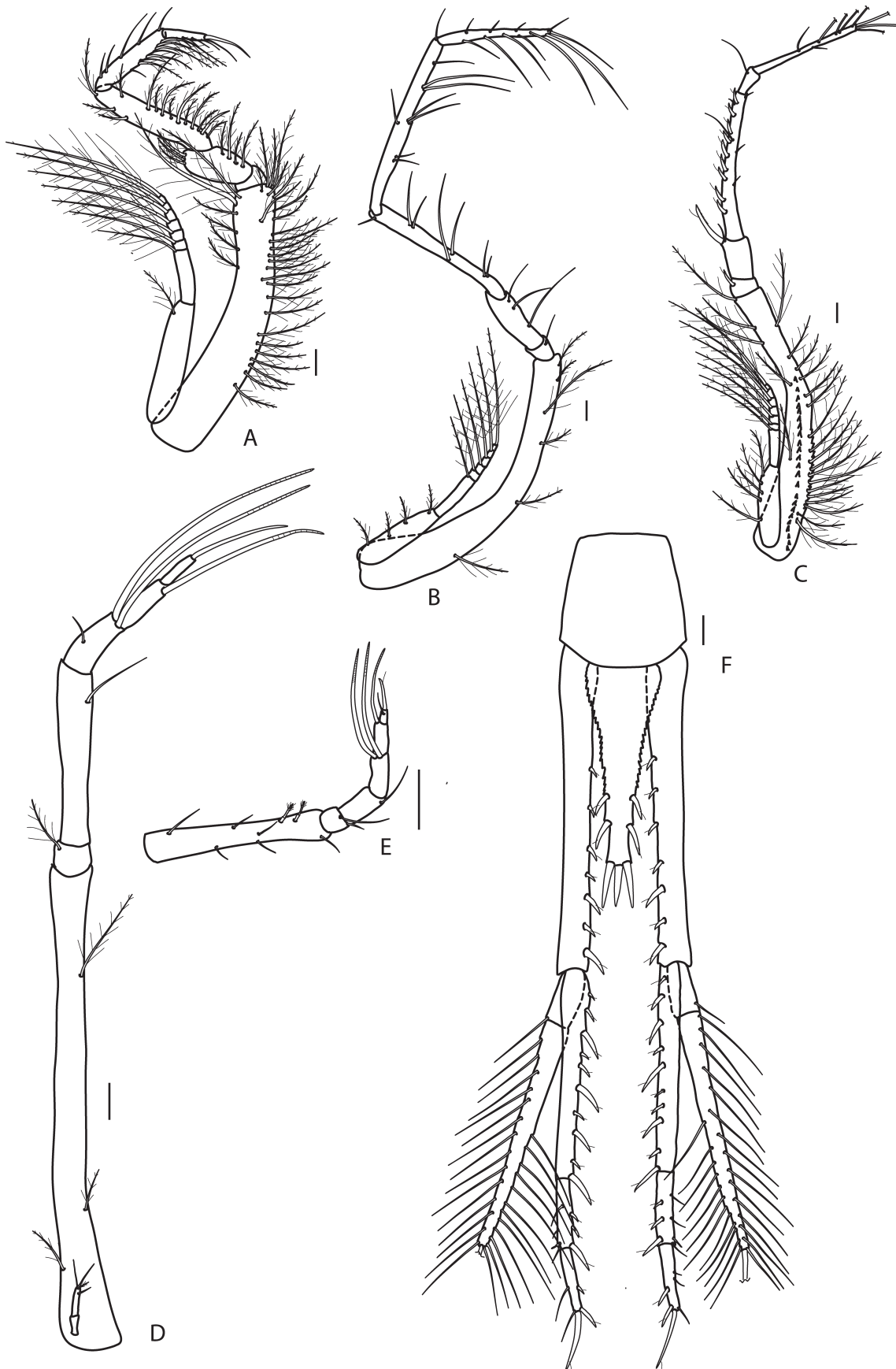


FIGURE 22. *Farragolamprops spinacristatus* n. sp. Paratype subadult female NIWA 45704, A, maxilliped 3; C, pereopod 2; E, pereopod 5. Holotype subadult female NIWA 45703, B, pereopod 1; D, pereopod 3; F, telson and uropods. Scale bars 0.1 mm.

Mandible navicular (broken), 13 micro serrate setae medially, *lacinia mobilis* with 2 cusps (Fig. 21E).

Maxillule with 2 endites; outer endite with 8 micro serrate setae; inner endite with 1 dentate, 1 simple and 2 micro serrate setae; palp with 1 seta (Fig. 21F).

Maxilla with 3 endites; broad endite distal margin with pappose, simple and dentate setae, medial margin with row of simple and pappose setae; medial narrow endite with 4 micro serrate setae terminally; distal narrow endite with 5 micro serrate setae terminally; both narrow endites extending past distal margin of broad endite (Fig. 21G).

Maxilliped 1 basis produced distally as broad lobe, lobe distal margin with simple setae, lateral margin with row of simple setae, medial margin with hook setae; ischium absent; merus with 2 plumose setae laterally; carpus 2.1 merus length, medial face with simple and comb setae, 1 plumose and 2 simple setae laterally; propodus 0.6 carpus length, with pappose and simple setae; dactylus 0.5 propodus length, with 3 simple setae terminally (Fig. 21H).

Maxilliped 2 basis as long as all other articles together, medial margin with 4 plumose setae, distal corner with 2 plumose setae, distal margin with fine hair-like setae; ischium 0.02 basis length, unarmed; merus 9.0 ischium length, with 1 pappose and 2 plumose setae; carpus 2.2 merus length, with 7 plumose setae medially; propodus 0.6 carpus length, with simple and plumose setae medially, 3 plumose setae laterally; dactylus 0.7 propodus length, with 3 simple setae medially, simple seta terminally (Fig. 21I).

Maxilliped 3 basis longer than next 4 articles together, margins with plumose setae, not expanded; ischium 0.04 basis length, unarmed; merus 4.5 ischium length, with 4 plumose setae medially, 3 plumose setae laterally; carpus 2.2 merus length, with plumose setae medially and 3 plumose setae laterally; propodus 0.75 carpus length, with simple and plumose setae medially, 5 simple setae laterally; dactylus 0.5 propodus length, with 2 simple setae terminally; exopod shorter than basis, basal article with 1 plumose seta, flagellum with plumo-annulate setae (Fig. 22A).

Holotype subadult female, NIWA 45703.

Pereopod 1 basis longer than next 3 articles together; ischium 0.06 basis length, with 1 simple seta; merus 3.3 ischium length, with 3 simple setae; carpus 2.6 merus length, with 7 simple setae; propodus 1.2 carpus length, with 8 simple setae; dactylus 0.7 propodus length, with 9 simple setae and 2 simple setae terminally; exopod shorter than basis, basal article with 4 plumose setae, flagellum with plumo-annulate setae (Fig. 22B).

Paratype ovigerous female, NIWA 45704.

Pereopod 2 basis longer than next 4 articles together, margins with plumose setae, with row of spines proximally; ischium 0.04 basis length, with 1 seta with single subterminal setule; merus 3.5 ischium length, with 1 simple seta and 1 seta with single subterminal setule; carpus 3.6 merus length, with 4 simple setae and 9 setae with single subterminal setule; propodus 0.2 carpus length, with 1 simple seta; dactylus 4.75 propodus length, with 7 simple setae and 2 simple setae terminally; exopod shorter than basis, basal article with 5 plumose setae, flagellum with plumo-annulate setae (Fig. 22C).

Holotype subadult female, NIWA 45703.

Pereopod 3 basis 1.5 all other articles together, with 3 plumose setae; ischium 0.07 basis length, with 1 plumose seta; merus 5.0 ischium length, with 1 simple seta; carpus 0.3 merus length, with 1 simple and 2 annulate setae; propodus 0.9 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with simple seta terminally; exopod rudimentary, 0.1 basis length, of 2 articles with simple and plumose setae (Fig. 22D).

Pereopod 4 not examined.

Paratype ovigerous female, NIWA 45704.

Pereopod 5 basis 1.2 all other articles together, with 6 simple and 2 complex pedunculate setae; ischium 0.1 basis length, with 2 simple setae; merus 1.75 ischium length, with 1 simple seta; carpus equal to merus length, with 2 annulate setae; propodus 0.7 carpus length, with 1 annulate seta; dactylus 0.4 propodus length, with 2 simple setae terminally (Fig. 22E).

Holotype subadult female, NIWA 45703.

Telson 1.5 length of pleonite 6, with 2 lateral setae with single subterminal setule, 3 simple terminal setae, longer than lateral setae (Fig. 22F).

Uropod peduncles 2.3 pleonite 6 length, 1.6 telson length, with 7 setae with single subterminal setule medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 1.6 articles 2 and 3 together, with 10 medial setae with single subterminal setule; article 2 0.4 article 1 length, with 3 setae with single subterminal setule medially, 1 pedunculate and 3 simple setae laterally; article 3 0.9 article 2 length, with 2 setae with single subterminal setule

medially, 2–3 simple setae laterally, terminal setae with single subterminal setule, 0.9 article 3 length. Uropod exopod 0.8 length of endopod; article 1 0.2 article 2 length, with 1 simple seta laterally; article 2 with 12 simple setae medially, 14–15 simple setae laterally, terminal seta broken (Fig. 22F).

Etymology. The new species is named *spinacristatus* from the Latin, for the anterior dorsal crest of spines on the carapace.

Depth. 520–644 m.

Distribution. Challenger Plateau, Chatham Rise, New Zealand, 40.88–43.29°S, 170.85–184.44°E.

Remarks. This species is large and quite distinctive in the lampropid fauna of New Zealand on the basis of the dorsal spine crest. The other species in the genus has a serrate dorsal crest in the female (entire in the adult male), but the serrations are much smaller than the teeth in *Farragolamprops spinacristatus*. In addition, *F. spinacristatus* has no ridges dorsal of the marginal carina on the carapace, and the telson terminal setae are equal in length, while in *F. seminalis* there are ridges dorsal of the marginal carina on the carapace, serrate in the female and juveniles and entire in the adult male, and the telson terminal setae are unequal in length, with the central seta short.

Hemilamprops Sars, 1883

Hemilamprops Sars, 1883: 11, 55.

Lampropoides.—Harada, 1959: 231, 237

Type species. *Vaunthompsonia rosea* Norman, 1863, by subsequent designation (Lomakina 1958a).

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella variable, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender, basis shorter than all other articles together. Pereopod 5 longer than pereopod 4 basis. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with long antenna, extending past pereon, without penial lobes, with 3 pairs of pleopods.

Species. *Hemilamprops assimilis* Sars, 1900, *H. bacescui* Petrescu & Wittmann, 2003, *H. bicarinatus* Ledoyer, 1988, *H. bigibbus* Gamô, 1975, *H. californicus* (Zimmer 1936), *H. chilensis* (Gerken & Haye, 2018), *H. cristatus* (Sars, 1870), *H. diversus* Hale, 1946, *H. emiensis* Gamô, 1999, *H. glabrus* Day, 1978, *H. gracilis* Hart, 1930, *H. impellucidus* n. sp., *H. izuanus* Harada, 1959, *H. japonicas* (Harada, 1959), *H. latus* Hale, 1946, *H. merlini* Mühlenhardt-Siegel 2005, *H. miyakei* Gamô, 1967, *H. normani* Bonnier, 1896, *H. pacificus* (Harada, 1959), *H. pectinatus* Lomakina, 1955, *H. pellucidus* Zimmer, 1908, *H. pterini* Shalla & Bishop, 2007, *H. roseus* (Norman, 1863), *H. serrulatus* Ledoyer, 1977, *H. tanseianus* Gamô, 1967, *H. ultimaspei* Zimmer, 1921, *H. uniplicatus* (Sars, 1872).

Remarks. Members of *Hemilamprops* can be difficult to impossible to distinguish from *Lamprops* and *Alamprops* if males are not present. There are some problematic species that have been placed in *Hemilamprops*: *H. abyssi* Gamô, 1989 and *H. bicarinatus* Ledoyer, 1988. *Hemilamprops abyssi* does not meet the definition of *Hemilamprops* given above, as the first article of the uropod exopod is 0.4 the length of article 2, rather than 0.5 or more the length of article 2, and is transferred to *Pseudolamprops*. The description of *H. bicarinatus* is based on two incomplete female specimens. The carapace sculpturing, which includes a marginal carina, suggests that *Hemilamprops* is not the correct genus, as does the reduced pereopod 5. However, without specimens that are more nearly complete, and perhaps the adult male, it is not possible to be definitive about the genus placement, so the species is retained in *Hemilamprops* for the present.

Key to the species of *Hemilamprops*

1. Telson with more than 5 terminal setae. 2
- Telson with 3 or 5 terminal setae. 3
2. Eyelobe with lenses. Telson with 2 or more pairs lateral setae. *H. roseus*
- Eyelobe without lenses. Telson with 1 pair lateral setae. *H. assimilis*

3.	Telson with 5 terminal setae	4
-	Telson with 3 terminal setae	10
4.	Dorsal crest serrated	<i>H. normani</i>
-	Dorsal crest entire	5
5.	Carapace with lateral ridges	6
-	Carapace without lateral ridges	9
6.	Carapace with 1 lateral ridge	6
-	Carapace with 2 lateral ridges	<i>H. japonicas</i>
7.	Telson shorter than uropod peduncles	<i>H. glabrus</i>
-	Telson equal to or longer than uropod peduncles	8
8.	Uropod exopod article 1 subequal to article 2	<i>H. californicus</i>
-	Uropod exopod article 1 much shorter than article 2	<i>H. pacificus</i>
9.	Telson with equal length terminal setae	<i>H. merlini</i>
-	Telson with unequal length terminal setae	<i>H. diversus</i>
10.	Dorsal crest serrated or toothed	11
-	Dorsal crest entire	16
11.	Carapace with 2 lateral ridges	<i>H. miyakei</i>
-	Carapace without lateral ridges	12
12.	Telson terminal setae at least twice as long as lateral setae	13
-	Telson terminal setae less than twice as long as lateral setae	14
13.	Telson with 5 or more lateral setae	15
-	Telson with 4 or fewer lateral setae	<i>H. cristatus</i>
14.	Telson terminal setae subequal in length; telson distinctly shorter than uropod peduncles	<i>H. pellucidus</i>
-	Telson terminal setae unequal in length, central seta long; telson length subequal to uropod peduncles	<i>H. impellucidus</i>
15.	Carapace with setae	<i>H. tanseianus</i>
-	Carapace without setae	<i>H. serrulatus</i>
16.	Carapace without lateral ridges	17
-	Carapace with lateral ridges	19
17.	Telson subequal to uropod peduncles	<i>H. izuanus</i>
-	Telson shorter than uropod peduncles	18
18.	Telson terminal setae at least twice as long as lateral setae	<i>H. ultimaspei</i>
-	Telson terminal setae less than twice long as lateral setae	<i>H. emiensis</i>
19.	Carapace with 2 or more lateral ridges	20
-	Carapace with 1 lateral ridge	23
20.	Telson with 3 or fewer lateral setae	<i>H. bacescui</i>
-	Telson with more than 5 lateral setae	21
21.	Carapace with 2 lateral ridges	<i>H. bicarinatus</i>
-	Carapace with more than 2 lateral lateral ridges	22
22.	Uropod exopod article 1 longer than article 2	<i>H. pectinatus</i>
-	Uropod exopod article 1 subequal or shorter than article 1	<i>H. bigibbus</i>
23.	Telson as long or longer than uropod peduncles	<i>H. uniplicatus</i>
-	Telson shorter than uropod peduncles	24
24.	Telson with more than 3 lateral setae	<i>H. gracilis</i>
-	Telson with 3 or fewer lateral setae	25
25.	Carapace ventral lateral ridge incomplete, short	<i>H. chilensis</i>
-	Carapace lateral ridge sweeping from pseudorostrum dorsally to mid-dorsal expansion	<i>H. pterini</i>

***Hemilamprops assimilis* Sars, 1883**

Hemilamprops assimilis Sars, 1883: 11, 55, pl. 1 figs 23–24.—Sars, 1899: 23, pl. 15.

Type material. Deposition unknown. Vardø, Finmark, N.E. Norway. Not seen.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest entire. Telson subequal to uropod peduncles, with 1 pair long lateral setae, 6 terminal setae, outer pair longest. Uropod exopod article 1 0.6 length of article 2. *Adult male* antenna extending to posterior border of pleonite 5.

Depth. 55–3000 m.

Distribution. Boreal Atlantic.

Remarks. There are only two species of *Hemilamprops* with more than 5 terminal setae on the telson, *H. assimilis* and *H. roseus*. The two species can be distinguished easily by the eyelobe and the lateral setation on the telson. In *H. assimilis* the eyelobe is very small and has no lenses, and the telson has only one pair of lateral setae, while in *H. roseus* the eyelobe is larger, possesses several lenses, and the telson has at least two pairs of lateral setae.

***Hemilamprops bacescui* Petrescu & Wittmann, 2003**

Hemilamprops bacescui Petrescu & Wittmann, 2003: 584, figs 182–199.

Type material. Holotype: NHMW 19654, subadult female. Paratypes: NHMW 19655, 2 subadult females, 2 subadult males; NHMW 19656, 2 subadult females, 1 subadult male; NHMW 19657, 1 subadult male; GAM Cum 268, 4 subadult females; GAM Cum 269, 1 subadult female; GAM Cum 270, 2 subadult males, 3 adult males; RMNH N 285, 1 subadult male; RMNH N 286, 1 subadult female; RMNH N 287, 2 subadult females, 1 subadult male. Weddell Sea, Antarctic, 75°40'S, 56°40'W. GAM types seen, NHMW and RMNH not seen.

Diagnosis. Carapace with several lateral ridges, without setae, dorsal crest entire. Pleonites with distinct dorsal crest. Telson 0.8 length of uropod peduncles, with 3 pairs lateral setae, 3 subequal terminal setae. Uropod exopod article 1 0.7 length of article 2. *Adult male* unknown.

Depth. 340–520 m.

Distribution. Weddell Sea, Antarctica, 70–76°S, 11–56°W.

Remarks. This species can be distinguished from all other *Hemilamprops* by the combination of two lateral ridges on the carapace, three terminal setae and three or fewer pairs of lateral setae on the telson. The most similar species is *H. bicarinatus* from the Indian Ocean; however, *H. bacescui* is only known from the Weddell Sea.

***Hemilamprops* (?) *bicarinatus* Ledoyer, 1988**

Hemilamprops (?) *bicarinatus* Ledoyer, 1988: 145–147, fig. 11A.

Type material. Deposition unknown. Mozambique Canal, 12°14'4"S, 46°41'6"E. Not seen.

Diagnosis. Carapace with 2 lateral ridges, without setae, dorsal crest with teeth. Telson 0.7 length of uropod peduncles, with 5–6 pairs lateral setae, 3 terminal setae. Uropod exopod unknown, broken. *Adult male* unknown.

Depth. 2500 m.

Distribution. Geyser Bank, off Madagascar, Indian Ocean, 12°14.4'S, 46°41'E.

Remarks. The description is based on two incomplete female specimens. The carapace sculpturing, which includes a marginal carina, suggests that *Hemilamprops* is not the correct genus, as does the reduced pereopod 5. However, without specimens that are more nearly complete, and perhaps the adult male, it is not possible to be definitive about the genus placement. Within *Hemilamprops*, the most similar species is *H. bacescui* from the Weddell Sea. The two species can be differentiated by the lateral setation on the telson. In *H. bacescui* there are three or fewer pairs of lateral setae on the telson, while in *H. bicarinatus* there are five or more pairs of lateral setae on the telson.

***Hemilamprops bigibbus* Gamô, 1975**

Hemilamprops bigibbus Gamô, 1975: 1–6, figs 1–3.

Type material. Deposition unknown. Sagami Bay, Japan. Not seen.

Diagnosis. Carapace with several lateral ridges, with few setae anteriorly, dorsal crest entire. Telson 0.9 length of uropod peduncles, with 6 lateral setae, 3 terminal setae. Uropod exopod article 1 0.8 length of article 2. *Adult male* unknown.

Depth. 704 m.

Distribution. Sagami Bay, Japan, 35°N, 139°E (estimated from Google Earth).

Remarks. This species is most similar to *H. pectinatus*, but can be differentiated by the proportions of the uropod exopod articles. In *H. bigibbus*, article 1 of the uropod exopod is longer than article 2, while in *H. pectinatus* article 1 of the uropod exopod is equal to or shorter than article 2.

Remarks. This species is represented by two specimens from the Angola Basin. The most similar species is *H.*

emiensis from Japan. These species can be differentiated by the number of lateral setae on the telson. In *H. brenkei* there are four or fewer pairs of lateral setae, while in *H. emiensis* there are at least six pairs of lateral setae.

***Hemilamprops californicus* Zimmer, 1936**

Hemilamprops ? *californica* Zimmer, 1936: 429–431, fig. 36a–d.

Hemilamprops californica.—Gamô, 1962: 199, fig. 34.

Hemilamprops californiensis.—Lie, 1969: 21–22.

Type material. Holotype; USNM 71439, ovigerous female. Paratypes: USNM 71471, 2 ovigerous females. Off Corona del Mar, California.

Diagnosis. Carapace with 1 pair lateral ridges, without setae, dorsal crest entire. Telson 1.0 length of uropod peduncles, with 3–5 pairs lateral setae, 5 terminal setae, outermost pair longest, inner pair shortest. Uropod exopod article 1 1.2 length of article 2. *Adult male* shorter than female, antenna extending to posterior border of pleonite 5; telson with 5 pairs lateral setae; uropods more setose than in female.

Depth. 20–30 m.

Distribution. Eastern Pacific, Vancouver to California.

Remarks. Given the remarks of Harada (1959) about the substantial differences between his specimens and those of Zimmer, it is likely that the specimens Harada described from Japan are not the same species as *H. californicus* Zimmer, 1936, thus Japan is not included in the distribution. The most similar species is *H. pacificus*, which can be distinguished by the different proportions of the uropod exopod. In *H. californicus* article 1 of the uropod exopod is subequal to article 2, while in *H. pacificus* article 1 of the uropod exopod is distinctly shorter than article 2.

***Hemilamprops chilensis* Gerken & Haye, 2018**

Hemilamprops ultimaspei.—Mühlenhardt-Siegel, 2003: 120–126, figs 1–3.

Hemilamprops chilensis Gerken & Haye, 2018: 2–8, fig. 1–4.

Type material. Holotype: MNHMCL CUM 11849, subadult female. Paratypes: MNHNCL CUM 11847, subadult female; MNHNCL CUM 11848, subadult male. Pelluco Beach, Chile, 41°29.52'S, 72°54.32'W.

Diagnosis. Carapace with incomplete ventral lateral ridge, without setae, dorsal crest entire. Telson 0.7 length of uropod peduncles, with 2 pairs lateral setae, 3 terminal setae. Uropod exopod article 1 0.8 length of article 2.

Depth. 19–20 m.

Distribution. Southern Chile and Patagonia.

Remarks. *Hemilamprops chilensis* is most similar to *H. ultimaspei*; however, the two species can be differentiated by the carapace and telson lateral setation. *Hemilamprops chilensis* has an incomplete ventral lateral ridge on the carapace and 2 pairs of lateral setae on the telson. *Hemilamprops ultimaspei* has no lateral ridges on the carapace and 3 pairs of lateral setae on the telson.

***Hemilamprops cristatus* (Sars, 1870)**

Lamprops cristata, Sars 1870: 152.

Hemilamprops cristata.—Sars, 1883: 11, 56.

? *Hemilamprops cristata*.—Calman, 1905: 41–42.

Type material. Deposition unknown. Lofoten, west coast of Norway. Not seen.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest serrate. Telson 0.8 length of uropod peduncles, with 3 pairs lateral setae, 3 terminal setae. Uropod exopod article 1 0.9 length of article 2. *Adult male* antenna extending to posterior border of pleonite 6; telson with 3 pairs lateral setae.

Depth. 130–4000 m.

Distribution. Boreal Atlantic.

Remarks. *Hemilamprops cristatus* is distinctive among North Atlantic congeners by its serrate crest on the carapace. The most similar species is *H. pellucidus*, which can be distinguished by the lateral setation on the telson. In *H. cristatus* there are four or fewer pairs of lateral setae, while in *H. pellucidus* there are five or more pairs of lateral setae.

***Hemilamprops diversus* Hale, 1946**

Hemilamprops diversus Hale, 1946: 183–187, figs 3–4.

Type material. Holotype: SAMA 2809, ovigerous female. Allotype: SAMA 2810, adult male. Off Eden, New South Wales, Australia.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest entire, ocular lobes extending to anterior margin of carapace. Telson 1.2 length of uropod peduncles, with 3 pairs lateral setae, 5 terminal setae, outermost pair long, median 3 setae equal in length. Uropod exopod article 1 0.6 length of article 2. *Adult male* antenna extending to posterior border of pleonite 6; telson with 4 pairs lateral setae, median seta of telson longer than inner pair, although outer pair longest.

Depth. 50–150 m.

Distribution. Southeastern Australia, 37°4'S, 149°54'E.

Remarks. *Hemilamprops diversus* can be distinguished from the other Australian species by the eyelobe extending only to the anterior border of the carapace. In the other *Hemilamprops* from Australian waters, the pseudorostrum extends anterior of the eyelobe. The most similar species of *Hemilamprops* to *H. diversus* is *H. merlini* from the Angola Basin, which can be distinguished by the terminal setae of the telson. In *H. diversus* the telson terminal setae are unequal in length, while in *H. merlini* the telson terminal setae are equal in length.

***Hemilamprops emiensis* Gamô, 1999**

Hemilamprops emiensis Gamô, 1999: 243–248, figs 1–3.

Type material. Holotype: NSMT Cr. 12961, adult male. Off Emi, Boso Peninsula, 35°00.1'N, 140°06.8'E. Not seen.

Diagnosis. *Female* unknown. *Adult male* carapace without lateral ridges, without setae, dorsal crest entire. Antenna flagellum extending to posterior border of pleonite 5. Telson 0.8 length of uropod peduncles, with 7 pairs lateral setae, 3 terminal setae, middle seta longest. Uropod exopod broken.

Depth. 145–150 m.

Distribution. Off Emi, Boso Peninsula, Japan, 35°0'N, 140°06.8'E.

Remarks. *Hemilamprops emiensis* is most similar to *H. brenkei*, which can be distinguished by the telson lateral setation. In *H. emiensis* there are six or more pairs of lateral setae on the telson, while in *H. brenkei* there are four or fewer pairs of lateral setae.

***Hemilamprops glabrus* Day, 1978**

Hemilamprops glabrus Day, 1978: 173–175, fig. 13.

Type material. Holotype: SAMC 15680, ovigerous female. Off northern Natal, 28°41'S, 32°36'E. Not seen.

Diagnosis. Carapace with single incomplete ventral lateral ridge, without setae, dorsal crest entire. Telson 0.8 length of uropod peduncles, without lateral setae, 5 terminal setae. Uropod exopod broken. *Adult male* unknown.

Depth. 1300–3716 m.

Distribution. Off Natal, South Africa, 28°41'S, 32°36'E; Mayotte Islands, Mozambique Channel, Indian Ocean, 11°44'–12°14.4'S, 46°41'–47°35'E.

Remarks. *Hemilamprops glabrus* is most similar to *H. californicus* and *H. pacificus*, but can be distinguished by the length of the telson relative to the uropod peduncles. In *H. glabrus* the telson is shorter than the uropod peduncles, while in both *H. californicus* and *H. pacificus* the telson is equal to or longer than the uropod peduncles.

***Hemilamprops gracilis* Hart, 1930**

Hemilamprops gracilis Hart, 1930: 4, fig. 1A–F.

Type material. Holotype: BCPM 978–112–1, female. Rocky Bay, Vancouver Island, Canada. Not seen.

Diagnosis. Carapace with one entire lateral ridge, without setae, dorsal crest entire. Telson 0.9 length of uropod peduncles, with 4–5 pairs lateral setae, 3 equal terminal setae. Uropod exopod article 1 2.0 length of article 2. *Adult male* unknown.

Depth. 120–200 m.

Distribution. Vancouver Island, East Pacific.

Remarks. The most similar species to *H. gracilis* are *H. chilensis*, *H. pterini* and *H. uniplicatus*. *Hemilamprops gracilis* is differentiated from these species by the telson being shorter than the uropod peduncles, with more than three pairs of lateral setae. In comparison, in *H. uniplicatus* the telson is equal to or longer than the uropod peduncles, while in both *H. chilensis* and *H. pterini* there are three or fewer pairs of lateral setae on the telson.

***Hemilamprops impellucidus* n. sp.**

(Figs 23–28)

Hemilamprops pellucida. Jones, 1960: 9–11.—Jones, 1963: 52–53.

Type material. Holotype: ovigerous female, NIWA 93204, 42.782°S, 176.70–176.72°E, 1023–1026 m, 16 April 2007. Paratypes: ovigerous female, dissected, NIWA 94873, collected with holotype; female, NIWA 94879, collected with holotype; adult male, dissected, NIWA 93190, 43.52°S, 178.62°E, 424–425, 18 April 2007.

Other material. 3 individuals, NIWA 12773, 45.35°S, 171.95°E, 1225 m, 13 October 1965. 2 individuals, NIWA 12774, 45.2°S, 171.87°E, 860 m, 13 October 1965. 14 individuals, NIWA 45798, 44.561–44.559°S, 178.48°W, 1076–1103 m, 10 April 2007. 3 individuals, NIWA 95396; 4 individuals, NIWA 95398, 2 individuals, NIWA 95403, 44.486–44.484°S, 177.141–177.146°E, 1235–1239 m, 6 April 2007. 1 individual, NIWA 95392, 3 individuals, NIWA 95401, 44.016–44.014°S, 178.521–178.518°E, 769–771 m, 7 April 2007. 20 individuals, NIWA 95405; 5 individuals, NIWA 95393; 7 individuals, 95401, 43.979–43.985°S, 179.63–179.622°E, 529–530 m, 9 April 2007. 7 individuals, NIWA 95401, 43.799–43.805°S, 175.316–175.315°E, 418–422 m, 27 April 2007. 1 individual, NIWA 12566, 43.583°S, 176.06°W, 229 m, 7 February 1954. 40 individuals, NIWA 45720, 43.53–43.536°S, 178.505–178.512°E, 346 m, 24 April 2007. 1 individual, NIWA 93190; 5 individuals, NIWA 95395, 43.521–43.523°S, 178.62–178.63°W, 424–425 m, 18 April 2007. 100 individuals, NIWA 95399, 43.512–43.52°S, 176.18°W, 196–218 m, 14 April 2007. 11 individuals, NIWA 45796, 43.29–43.293°S, 175.55–175.56°W, 638–644 m, 14 April 2007. 4 individuals, NIWA 95397, 43.065–43.073°S, 174.93°W, 933–940 m, 13 April 2007. 30 individuals, NIWA 45797; 6 individuals, NIWA 95394, 42.996–42.991°S, 178.996–179.005°E, 520–530 m, 24 April 2007. 2 individuals, NIWA 12568, 42.898°S, 170.303°E, 245 m, 19 February 1982. 2 individuals, NIWA 12567, 42.84°S, 169.978°E, 297 m. 60 individuals, NIWA 45799, 42.782°S, 176.72°W, 1023–1026 m, 16 April 2007. 10 individuals, NIWA 95400, 42.621–42.62°S, 175.923–175.934°E, 1194–1199 m, 26 April 2007. 1 individual, NIWA 12569, 42.39°S, 170.893°E, 167 m, 30 March 1982. 1 individual, NIWA 12771, 41.377°S, 170.902°E, 285 m, 24 February 1982. 3 individuals, NIWA 12772, 40.88°S, 171.413°E, 195 m, 6 March 1982. 12 individuals, NIWA 45794, 40.88–40.888°S, 170.856–170.857°E, 529–534 m, 6 June 2007. 4 individuals, NIWA 95404, 39.637–39.646°S, 172.153–172.152°E, 264–266 m, 7 June 2007. 1 individual, NIWA 94878, 38.618–38.626°S, 168.943–168.949°E, 480–482 m, 29 May 2007.

Diagnosis. *Female* carapace without lateral ridges, without setae, dorsal crest serrate, continuing onto eyelobe. Telson 0.9 uropod peduncles, with 9 pairs lateral setae, 3 terminal setae, central seta longest. *Adult male* carapace

dorsal crest entire. Telson equal to uropod peduncles, with 8–10 pairs lateral setae, 3 unequal terminal setae, central seta longest. Uropod exopod article 1 0.9 length of article 2.

Description. Holotype ovigerous female, NIWA 93204; paratype ovigerous female, NIWA 94873.

Ovigerous female, holotype 7.6 mm, paratype 8.2 mm. Carapace without lateral ridges, with distinct dorsolateral swelling anteroventral corner serrate, medial dorsal crest serrate; pseudorostral lobes 0.3 carapace length, meet in front of eyelobe; eyelobe 0.1 carapace length, with distinct lenses; carapace 1.4–1.5 length of pereonites together (Fig. 23A, B).

Antennule peduncle article 1 1.3 times articles 2 and 3 together, margin serrate, with simple setae; article 2 0.5 article 1 length, with few simple setae; article 3 0.6 article 2 length, unarmed; main flagellum of 5 articles, 0.9 length of article 1, with 2 simple and 2 aesthetasc setae terminally; accessory flagellum broken off (Fig. 23C).

Antenna of 4 articles; article 1 stout, with 1 pappose and 1 plumose setae; article 2 small, with pappose seta; article 3 margins serrate; article 4 slender, equal to article 3 length, with few simple setae terminally (Fig. 23D).

Mandible navicular, with 12–14 microserrate setae medially, *lacinia mobilis* with 3 cusps (Fig. 23E).

Maxillule with 2 endites; outer endite with 1 microserrate and 2 rows stout setae terminally; inner endite with 3 simple and 1 tricuspid setae; palp with 2 setae (Fig. 23F).

Maxilla with 3 endites; broad endite; medial narrow endite with microserrate setae terminally; distal narrow endite with microserrate setae terminally; both narrow endites (Fig. 23G).

Maxilliped 1 basis produced distally as broad lobe, distal margin with stout seta, with 4 pappose setae medially; ischium absent; merus with 1 plumose seta laterally; carpus 1.9 merus length, medial face with pappose and 4 comb setae, with 2 plumose setae laterally; propodus 0.4 carpus length, margin serrate, with 2 plumose and several simple setae; dactylus 1.0 propodus length, with simple setae terminally (Fig. 23H).

Maxilliped 2 basis 0.8 all other articles together, with 5 thickly plumose and 1 plumose setae, brood plate with stout annulate setae; ischium 0.1 basis length, unarmed; merus 2.7 ischium length, with thickly plumose seta medially, plumose seta laterally; carpus 1.5 merus length, with plumose setae medially, plumose seta laterally; propodus 0.8 carpus length, with sparsely plumose setae medially, plumose seta laterally; dactylus 0.5 propodus length, with 3 simple setae terminally (Fig. 24A).

Maxilliped 3 basis 1.1 all other articles together, with plumose setae medially, distal corner with 1 plumose and 2 pappose setae; ischium 0.08 basis length, unarmed; merus 1.3 ischium length, with 3 pappose setae medially, 2 plumose setae laterally, lateral margin with few small teeth; carpus 3.1 merus length, with pappose setae medially, plumose setae laterally; propodus 0.8 carpus length, with plumose setae medially and laterally; dactylus 0.3 propodus length, with 4 simple setae terminally; exopod 0.8 basis length, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 24B).

Pereopod 1 basis 0.9 next 4 articles together, with pappose setae on margins; ischium 0.1 basis length, with plumose seta; merus 2.3 ischium length, with 2 plumose and 3 simple setae; carpus 1.0 merus length, with 4 simple setae; propodus 2.2 carpus length, with several simple setae; dactylus broken; exopod 0.7 basis length, basal article with 4 simple setae, flagellum with plumo-annulate setae (Fig. 24C).

Pereopod 2 basis 0.7 all other articles together, with plumose and simple setae; ischium 0.1 basis length, with 2 setae with single subterminal setule; merus 2.6 ischium length, with 2 setae with single subterminal setule and 4 plumose setae; carpus 2.3 merus length, with 13 setae with single subterminal setule and 4 simple setae; propodus 0.2 carpus length, with seta with single subterminal setule; dactylus 2.6 propodus length, with 4 setae with single subterminal setule and 5 simple setae terminally; exopod 0.8 basis length, basal article with plumose seta, flagellum with plumo-annulate setae (Fig. 24D).

Pereopod 3 basis 1.3 all other articles together estimated, with 6 plumose setae; ischium 0.1 basis length, with 2 simple setae; merus 1.2 ischium length, with 4 annulate setae; carpus 2.3 merus length, with 6 annulate setae; propodus 0.4 carpus length, with annulate seta; dactylus 0.6 propodus length, with simple seta terminally; exopod rudimentary, 0.1 basis length, of 2 articles with 3 simple setae (Fig. 24E).

Pereopod 4 not figured.

Pereopod 5 basis broken, with plumose setae; ischium with 1 simple and 2 annulate setae; merus 1.4 ischium length, with 3 annulate setae; carpus 1.6 merus length, with 7 annulate setae; propodus 0.5 carpus length, with annulate seta; dactylus 0.5 propodus length, with 2 simple setae and simple seta terminally (Fig. 24F).

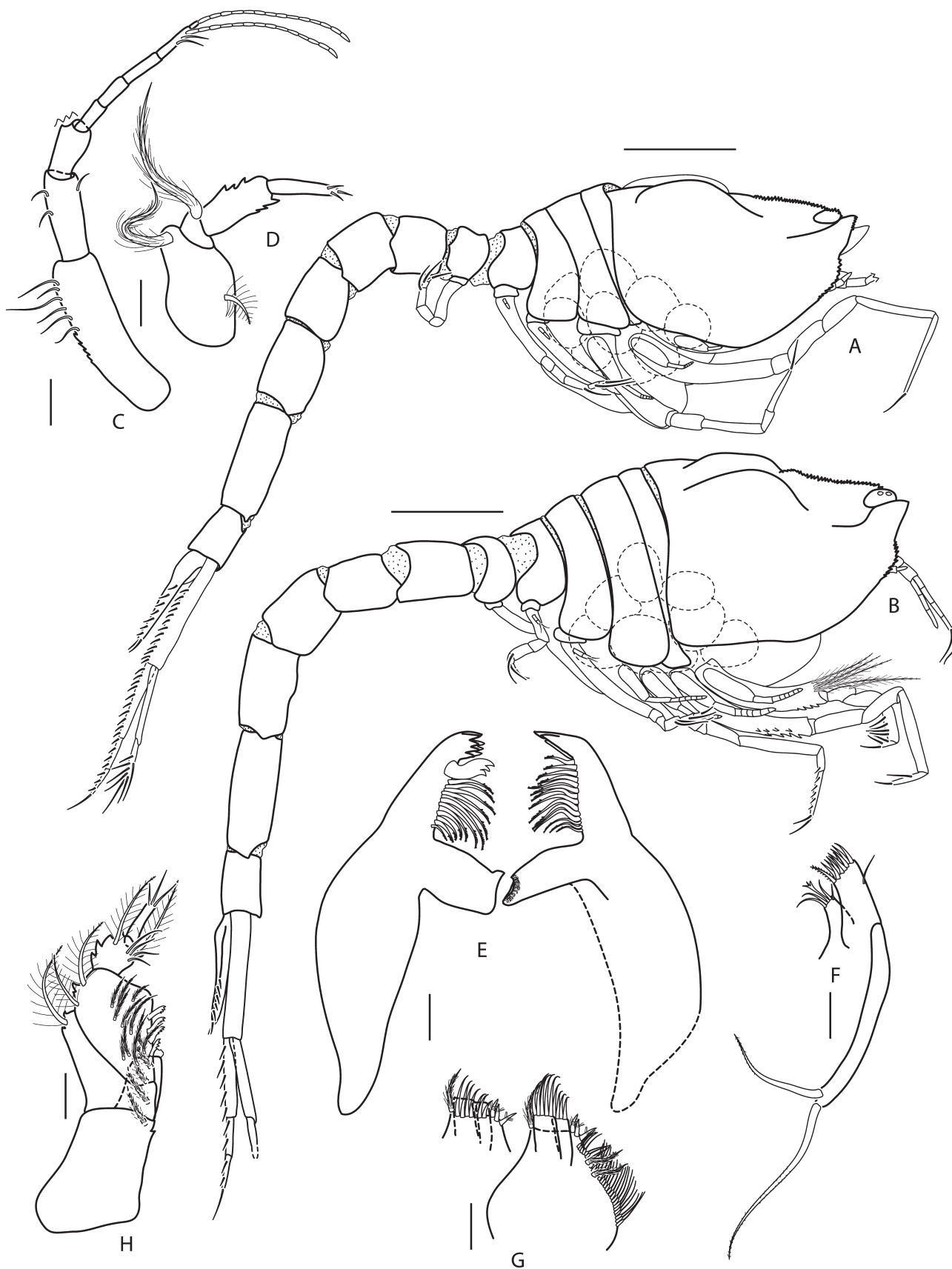


FIGURE 23. *Hemilamprops impellucidus* n. sp. Holotype ovigerous female NIWA 93204, A, side view. Paratype ovigerous female NIWA 94873, B, side view; C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla. Scale bars full body 1.0 mm, all others 0.1 mm.



FIGURE 24. *Hemilamprops impellucidus* n. sp. Paratype ovigerous female NIWA 94873, A, maxilliped 2; B, maxilliped 3; C, pereopod 1; D, pereopod 2; E, pereopod 3; F, pereopod 5. Scale bars 0.1 mm.

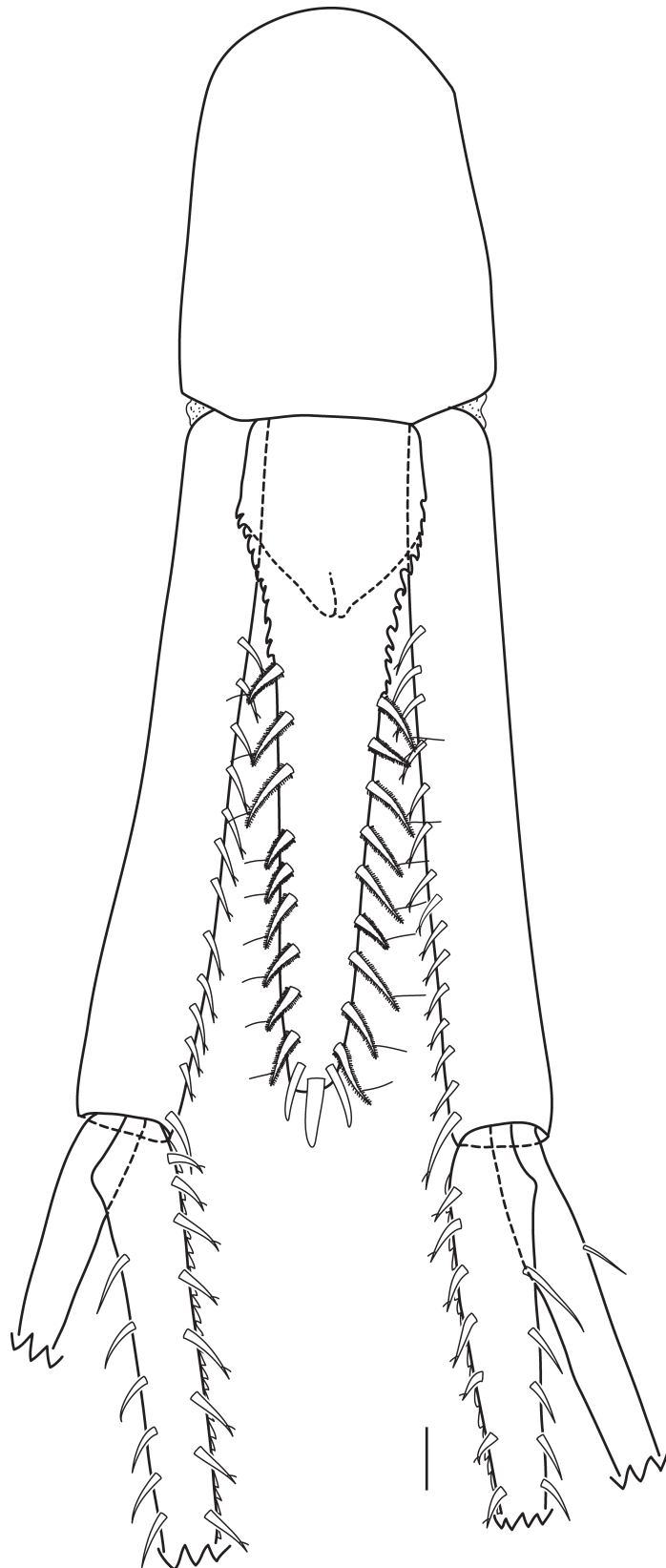


FIGURE 25. *Hemilamprops impellucidus* n. sp. Paratype ovigerous female NIWA 94873, A, telson and uropods. Scale bars 0.1 mm.

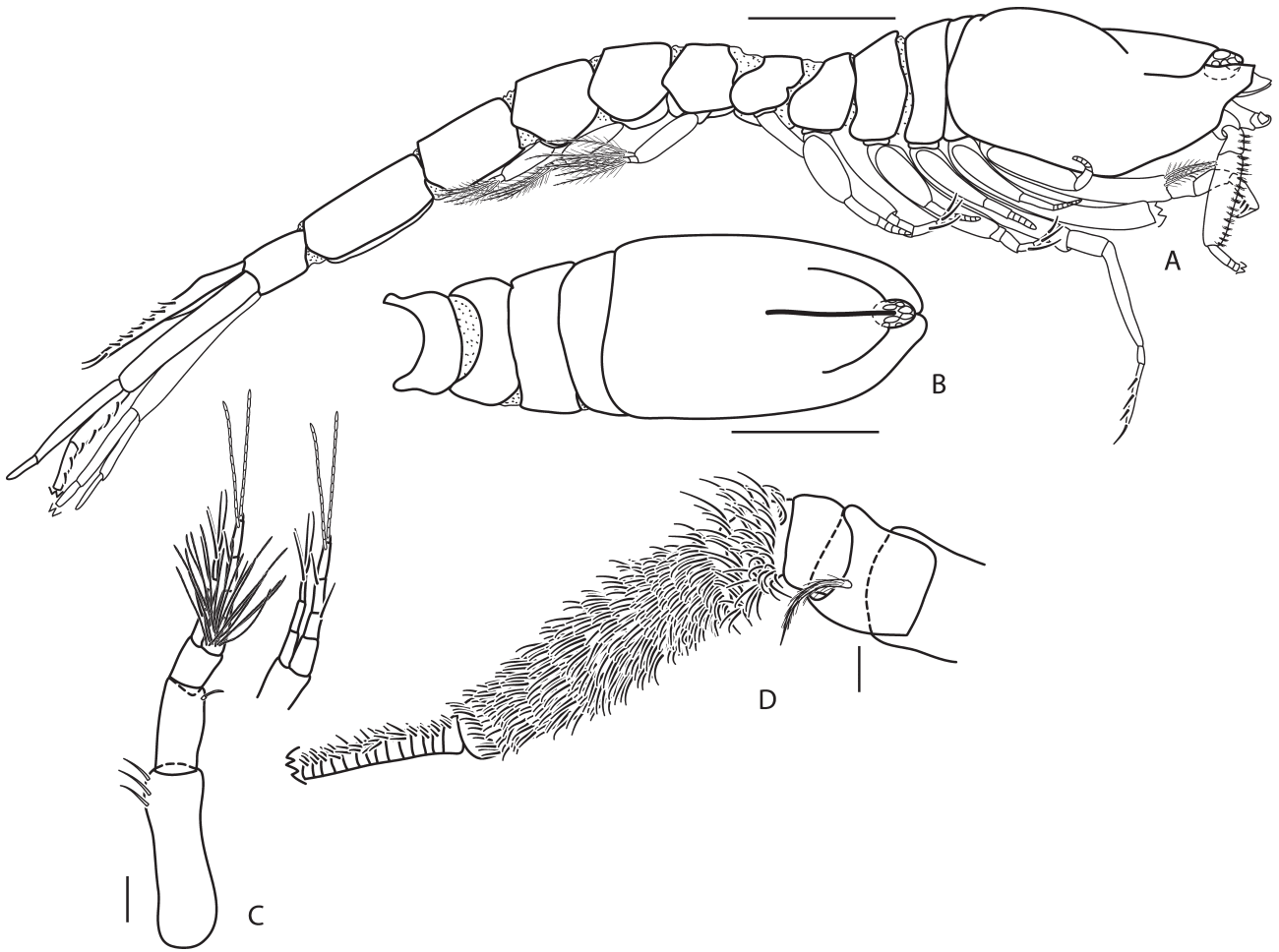


FIGURE 26. *Hemilamprops impellucidus* n. sp. Paratype adult male NIWA 93190, A, side view; B, dorsal view; C, antennule; D, antenna. Scale bars full body 1.0 mm, all others 0.1 mm.

Telson 1.7 length of pleonite 6, with 9 pairs micro serrate setae with single subterminal setule laterally, 3 terminal setae, central seta stout and longest (Fig. 25).

Uropod peduncles 1.8 pleonite 6 length, 1.1 telson length, with 13–15 setae with single subterminal setule medially. Uropod endopod broken; article 1 broken, medial margin with hyaline fringe, with setae with single subterminal setule medially, simple setae laterally. Uropod exopod broken (Fig. 25).

Paratype adult male, NIWA 93190.

Adult male, 7.2 mm. Carapace with lateral ridges, with dorsolateral swellings, medial crest entire; pseudorostral lobes 0.4 carapace length; eyelobe 0.1 carapace length, with multiple lenses; carapace 1.3 length of pereonites together (Fig. 26A, B).

Antennule peduncle article 1 1.4 articles 2 and 3 together, with 3 simple setae; article 2 0.5 article 3 length, with simple seta; article 3 0.5 article 2 length, unarmed; main flagellum of 5 articles, article 1 with many slender aesthetascs, 2 stout aesthetascs terminally; accessory flagellum of 3 articles, with few simple setae (Fig. 26C).

Antenna broken, expected to extend past pereon; peduncle of 5 articles; article 2 with pappose seta; articles 4–5 with ranks of setae, completely circling articles; flagellum broken, articles each with several setae (Fig. 26D)

Mandible–maxilliped 2 not figured.

Maxilliped 3 basis 1.3 all other articles together, with pappose setae medially, simple setae laterally, with 4 plumose setae at distal corner; ischium 0.06 basis length, unarmed; merus 2.0 ischium length, with pappose setae medially, plumose setae laterally; carpus 1.9 merus length, with pappose setae medially, plumose setae laterally; propodus 1.0 carpus length, with plumose setae medially and laterally; dactylus 0.3 propodus length, with 3 simple setae terminally; exopod 0.8 basis length, basal article with many short plumose setae, flagellum with plumo-annulate setae (Fig. 27A).



FIGURE 27. *Hemilamprops impellucidus* n. sp. Paratype adult male NIWA 93190, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, pleopod 1; H, pleopod 2; I, pleopod 3. Scale bars 0.1 mm.

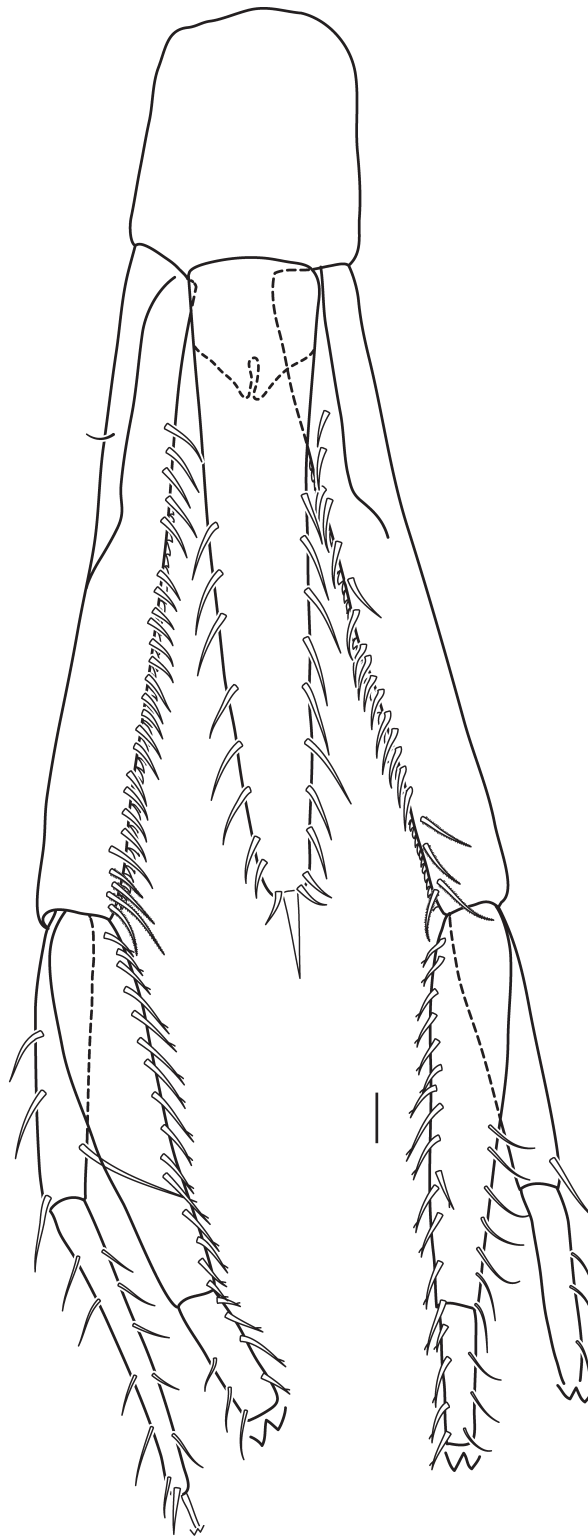


FIGURE 28. *Hemilamprops impellucidus* n. sp. Paratype adult male NIWA 93190, A, telson and uropods. Scale bars 0.1 mm.

Pereopod 1 basis 0.7 all other articles together, with pappose setae medially, plumose setae laterally; ischium 0.06 basis length, with 2 plumose setae; merus 2.8 ischium length, with plumose setae on margins; carpus 1.4 merus length, with 2 simple and 1 plumose setae; propodus 1.9 carpus length, with 4 simple setae; dactylus 1.0 propodus length, with 6 simple setae and 3 simple setae terminally; exopod 0.7 basis length, basal article with many short plumose setae, flagellum with plumo-annulate setae (Fig. 27B).

Pereopod 2 basis 1.0 next 4 articles together, with pappose setae medially, plumose setae laterally; ischium 0.1

basis length, with seta with single subterminal setule; merus 2.0 ischium length, with 2 simple, 1 plumose and 1 with single subterminal setule setae; carpus 2.9 merus length, with 9 microserrate, 4 simple and 1 plumose setae; propodus 0.2 carpus length, with simple seta; dactylus broken off; exopod 0.9 basis length, basal article with many short plumose setae, flagellum with plumo-annulate setae (Fig. 27C).

Pereopod 3 basis 0.5 all other articles together, with many plumose setae; ischium 0.06 basis length, with 2 annulate setae; merus 2.7 ischium length, with 3 simple setae; carpus 1.1 merus length, with 2 simple, 2 plumose and 2 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.3 propodus length, with simple seta and simple seta terminally; exopod 0.9 basis length, basal article with several plumose setae, flagellum with plumo-annulate setae (Fig. 27D).

Pereopod 4 basis 0.6 all other articles together, with pappose and plumose setae; ischium 0.07 basis length, with 2 simple and 4 annulate setae; merus 2.3 ischium length, with 1 simple and 2 annulate setae; carpus 1.1 merus length, with 2 simple, 2 plumose and 4 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.6 propodus length, with simple seta and simple seta terminally; exopod 0.9 basis length, basal article with several plumose setae, flagellum with plumo-annulate setae (Fig. 27E).

Pereopod 5 basis broken, with plumose and simple setae; ischium with 1 plumose and 3 annulate setae; merus 2.7 ischium length, with 2 plumose setae; carpus 1.1 merus length, with 1 plumose, 1 simple and 4 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.6 propodus length, with simple seta terminally (Fig. 27F).

Telson 2.6 length of pleonite 6, with 8–9 simple lateral setae, 3 terminal setae, central seta more than twice length of outer pair (Fig. 28).

Uropod peduncles 2.7 pleonite 6 length, 1.0 telson length, with many simple setae medially, 4 distal most medial setae microserrate. Uropod endopod broken; article 1 with 13–15 setae with single subterminal setule medially, several simple setae laterally; article 2 0.8 article 1 length, with 3–4 setae with single subterminal setule medially, 3 simple setae laterally; article 3 missing. Uropod exopod article 1 with 4 simple setae; article 2 1.1 article 1 length, with 10 simple setae marginally, 2 simple setae terminally (Fig. 28).

Etymology. The new species is named *impellucidus* from the Latin *im*, meaning not, in combination with *pellucidus*, as it is most likely to be confused with *Hemilamprops pellucidus*.

Depth. 167–1239 m.

Distribution. Chatham Rise, Challenger Plateau, New Zealand, 38.618–45.35°S, 168.943°E–178.62°W.

Remarks. *Hemilamprops impellucidus* is most likely to be confused with *H. pellucidus*, as the species share an overall similarity in form and the serrate dorsal crest. However, in *H. impellucidus* the antennule main flagellum is of five long, slender articles, the eyelobe has lenses in both females and males, the telson is similar in length to the uropod peduncles (0.9 in the female, 1.0 in the male), and the telson terminal setae are distinctly unequal, with the central seta longer than the outer pair. In contrast, in *H. pellucidus*, the antennule main flagellum is of four short, stout articles, the eyelobe is without lenses in either sex, the telson is much less than 0.9 the length of the uropod peduncles, and the telson terminal setae are equal in length. In addition, reproductive individuals of *H. impellucidus* are 7–8.5 mm, while very immature males and females of *H. pellucidus* are 6–8 mm, suggesting mature individuals will likely be distinctly larger than mature individuals of *H. impellucidus*.

***Hemilamprops izuanus* Harada, 1959**

Hemilamprops izuanus Harada, 1959: 231–234, fig. 12.

Type material. Deposition unknown. Shimoda Bay, Izu Peninsula, Japan. Not seen.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest entire. Telson 1.0 length of uropod peduncles, with 6 pairs lateral setae, 3 terminal setae, middle seta longest. Uropod exopod article 1 0.5 length of article 2. *Adult male* smaller than female, antennule with group of aesthetascs on first article of main flagellum, antenna extending to posterior border of pleonite 2; telson with 7 pairs lateral setae.

Depth. 50 m.

Distribution. Off Izu Peninsula, Japan, 34°40'N, 138°55'E.

Remarks. *Hemilamprops izuanus* is most similar to *H. brenkei*, *H. emiensis* and *H. ultimaspei*, but can be

differentiated by the telson being subequal to the uropod peduncles, rather than distinctly shorter than the uropod peduncles.

***Hemilamprops japonicus* (Harada, 1959)**

Lampropoides japonicus Harada, 1959: 237.—Gamô, 1960: 118, pl. 59, fig. 8.

Type material. Deposition unknown. Shimoda Bay, Izu Peninsula, Japan. Not seen.

Diagnosis. Carapace with 2 lateral ridges, 1 incomplete, without setae, dorsal crest entire. Telson equal to length of uropod peduncles, with 5 pairs lateral setae, 5 terminal setae, outermost pair longest, central seta long, inner pair very short. Uropod exopod article 1 1.1 length of article 2. *Adult male* antenna extending to posterior border of pleonite 5; telson with 5 pairs lateral setae.

Depth. The author stated “in shallow water” (Harada 1959).

Distribution. Shimoda Bay, Izu Peninsula, Japan, 34°8'N, 139°E.

Remarks. Harada (1959) stated living specimens had melanophores, with black bands on the third and fourth pereonites and the second, third and fourth pleonites. *Hemilamprops japonicus* is most similar to *H. californicus*, *H. glabrus* and *H. pacificus*, but can be distinguished by the two lateral ridges on the carapace, while the other species have a single lateral ridge on the carapace.

***Hemilamprops merlini* Mühlenhardt-Siegel, 2005**

Hemilamprops merlini Mühlenhardt-Siegel, 2005: 114–117, figs 1–2.

Type material. Holotype: ZMH K 40,416, non ovigerous female. Paratypes: ZMH K 40,417, 15 females, 10 subadult males, 9 juveniles. Angola Basin, 22°20.0'–22°20.2'S, 3°18.3'–3°18.4'E. Not seen.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest entire. Pleonites without dorsal crest. Telson 0.6 length of uropod peduncles, with 4–5 pairs lateral setae, 5 terminal setae. Uropod exopod article 1 0.9 length of article 2. *Adult male* unknown.

Depth. 1798–5144 m.

Distribution. Angola Basin, 22°20'S, 3°18.3'E, and Bellingshausen Sea.

Remarks. *Hemilamprops merlini* is most similar to the Australian species *H. diversus*, but can be distinguished by the equal length terminal setae on the telson. In *H. diversus* the terminal setae on the telson are unequal in length.

***Hemilamprops miyakei* Gamô, 1967**

Hemilamprops miyakei Gamô, 1967: 270–274, figs 19–21.

Type material. Holotype: adult female, deposition unknown. Sagami Bay, Japan. Not seen.

Diagnosis. Carapace with 2 pairs incomplete, serrate ridges, without setae, dorsal crest serrate, entire carapace covered with small teeth. Pleonites without dorsal crest. Telson 0.9 length of uropod peduncles, with 11–13 pairs lateral setae, 3 terminal setae. Uropod exopod article 1 1.7 length of article 2. *Adult male* unknown.

Depth. 1000 m.

Distribution. Sagami Bay, Japan, 35°N, 139°E, estimated.

Remarks. This species is remarkable and unique within the genus for the very spinose appearance, with the carapace covered in small spines, the ridges being marked by large spines, and small spines present throughout the pereonites and pleonites.

***Hemilamprops normani* Bonnier, 1896**

Hemilamprops Normani Bonnier, 1896: 546–549, pl 29, fig. 3.—Fage, 1940: 6; 1951: 94, fig. 81.

Hemilamprops cristata.—Calman, 1905: 41, 49.

Type material. Deposition unknown. Bay of Biscay, 44°36' N, 4°25' W, and 44°17' N, 4°38' W. Not seen.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest serrate. Pleonites without dorsal crest. Telson 0.6 length of uropod peduncles, with 7 pairs lateral setae, 5 terminal setae, central seta longest. Uropod exopod article 1 1.1 length of article 2. *Adult male* unknown.

Depth. 220–3000 m.

Distribution. Eastern Atlantic, Ireland, Gulf of Gascogne, Monaco, Aegean Sea, Azores, 44°36'–59°36' N, 4°25'–70°0' W.

Remarks. This species is differentiated from all other *Hemilamprops* by the combination of a serrated dorsal crest and five terminal setae on the telson.

***Hemilamprops pacificus* (Harada, 1959)**

Lampropoides pacificus Harada, 1959: 243–246.

Hemilamprops pacificus.—Gamô, 1963: 15.

Type material. Deposition unknown. Nishina and Shimoda, Japan. Not seen.

Diagnosis. Carapace with 1 lateral ridge, without setae, dorsal crest entire. Pleonites without dorsal crest. Telson subequal to length of uropod peduncles, with 3 pairs lateral setae, 5 terminal setae, outermost pair longest, inner pair short. Uropod exopod article 1 0.4 length of article 2. *Adult male* antenna extending to posterior border of pleonite 5; telson with 3 pairs lateral setae.

Depth. 90 m.

Distribution. Shimoda Bay, Izu Peninsula, Japan, 34°40' N, 138°55' E.

Remarks. Harada (1959) described coloration in this species, with the male being more pigmented than the female. *Hemilamprops pacificus* can be distinguished from the similar species *H. californicus* by the proportions of the uropod exopod. In *H. pacificus* article 1 of the uropod exopod is distinctly shorter than article 2, while in *H. californicus* article 1 of the uropod exopod is subequal to article 2.

***Hemilamprops pectinatus* Lomakina, 1955**

Hemilamprops pectinatus Lomakina, 1955: 138, figs 34–36; 1958a: 101–103, fig. 49.

Type material. Deposition unknown. Sea of Okhotsk. Not seen.

Diagnosis. Carapace with several lateral ridges, without setae, dorsal crest entire. Pleonites with dorsal crest. Telson 0.9 length of uropod peduncles, with 6 pairs lateral setae, 3 terminal setae. Uropod exopod article 1 1.7 length of article 2. *Adult male* carapace square in dorsal view, vs, oval in female, sculpturing reduced; antenna extending just past pereon; telson with 3 pairs lateral setae.

Depth. 31–440 m.

Distribution. Western Boreal Pacific, 59.2° N, 143°15' E.

Remarks. The male carapace shape is unusual, being square in dorsal view while the female is oval in a similar view. The male carapace is less sculptured than the female, as expected in a swimming male. The most similar species is *H. bigibbus*, from Japan, which can be differentiated by the proportions of the uropod exopod. In *H. pectinatus* in the uropod exopod, article 1 is longer than article 2, while in *H. bigibbus* article 1 is shorter than or subequal to article 2.

***Hemilamprops pellucidus* Zimmer, 1908**

Hemilamprops pellucida Zimmer, 1908: 171–172, pl. 39 figs 53–54, pl. 40 figs 55–59.

Type material. Syntypes: ZMB 13361, juvenile female, juvenile male. Agulhas Bank, 35°09'S, 18°32'E.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest serrate, eyelobe serrate. Pleonites without dorsal crest. Telson 0.7 length of uropod peduncles, with 7 pairs lateral setae, 3 terminal setae. Uropod exopod article 1 1.3 length of article 2. *Adult male* telson with 4 pairs lateral setae.

Depth. 226–3725 m.

Distribution. Southern oceans, from Brazil to South Africa, Australia and Antarctic.

Remarks. The distribution for this species is excessive, given the generally low dispersal capabilities in the Cumacea. It is likely that the records represent a group of species that are large and similar in carapace morphology, particularly in having a distinct dorsal crest that continues onto the eyelobe and a relatively long pseudorostrum. The most similar species is *Hemilamprops impellucidus* **n. sp.**, which can be differentiated by the antennule flagellum with five long slender articles, eyelobe with lenses, telson similar in length to uropod peduncles, and unequal telson terminal setae with the central seta longer than the outer pair, while in *H. pellucidus* the antennule flagellum is of four short, stout articles, the eyelobe is without lenses, the telson is much shorter than the uropod peduncles, and the telson terminal setae are equal in length. Another similar species is *H. cristatus* from the North Atlantic, which can be differentiated by four or fewer pairs of lateral setae on the telson, while in *H. pellucidus* there are at least five pairs of lateral setae on the telson.

***Hemilamprops pterini* Shalla & Bishop, 2007**

Hemilamprops pterini Shalla & Bishop, 2007: 1193–1196, figs 2, 3.

Type material. Holotype: NMSZ 2000.249.1644, immature male. Paratypes: NMSZ 1999.238.0278, 1 preparatory female; NMSZ 1999.238.0279, 1 preparatory male; NMSZ 1999.217.01003, 1 pre-preparatory female. Not seen.

Diagnosis. Carapace with one lateral ridge, without setae, dorsal crest entire. Pleonites without dorsal crest. Telson 0.8 length of uropod peduncles, with 2–3 pairs lateral setae, 3 terminal setae. Uropod exopod article 1 1.1 length of article 2. *Adult male* unknown.

Depth. 235–1095 m.

Distribution. Boreal northeastern Atlantic, 60–62°N, 0–3°W.

Remarks. *Hemilamprops pterini* is most similar to *H. chilensis*, but can be differentiated by the carapace lateral ridges. In *H. pterini* a lateral ridge sweeps from the pseudorostrum dorsally and connects with the branchial expansions, while in *H. chilensis* the lateral ridge is short and ventral to the pseudorostral suture, and does not come dorsal of the midline of the body.

***Hemilamprops roseus* (Norman, 1863)**

Vaunthompsonia rosea Norman, 1863: 271, pl. 13, figs 1–3.

Cyrianassa elegans.—Norman, 1863: 275, pl. 13, figs 4–9.

Lamprops rosea.—Sars, 1865: 19.

Hemilamprops roseus.—Sars, 1883: 11, 55.

Type material. Deposition unknown. East and North of Tynemouth, North Sea, coast of Northumberland, UK. Not seen.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest entire. Pleonites without dorsal crest. Telson 1.0 length of uropod peduncles, with 2 pairs lateral setae, 8 terminal setae. Uropod exopod article 1 0.6 length of article 2. *Adult male* antenna extending to posterior border of pleonite 6; telson with 2 pairs lateral setae, 6 terminal setae.

Depth. 46–970 m.

Distribution. Boreal northeastern Atlantic.

Remarks. There is only one other species with more than five terminal setae on the telson, *H. assimilis*, which can be distinguished by the eyelobe and telson lateral setae. In *H. roseus* the eyelobe is larger, with distinct lenses, and the telson has two or more pairs of lateral setae, while in *H. assimilis* the eyelobe is without lenses and the telson has one pair of lateral setae.

***Hemilamprops serrulatus* Ledoyer, 1977**

Hemilamprops serrulatus Ledoyer, 1977: 200, fig. 5.

Type material. Lectotype: MNHN Cu 163, female. Paratype: MNHN Cu 163, female. Kerguelen.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest serrate. Pleonites without dorsal crest. Telson 0.9 length of uropod peduncles, with 6 pairs lateral setae, 3 terminal setae. Uropod exopod article 1 1.2 length of article 2. *Adult male* unknown.

Depth. 195 m.

Distribution. Kerguelen Islands, 49.3°S, 69.3°E.

Remarks. The most similar species to *H. serrulatus* is *Pseudolamprops abyssi* from the Japan Trench. *Hemilamprops serrulatus* has the telson shorter than the uropod peduncles, while *P. abyssi* has the telson longer than the uropod peduncles.

***Hemilamprops tanseianus* Gamô, 1967**

Hemilamprops tanseianus Gamô, 1967: 265–269, figs 17–18.

Type material. Deposition unknown. Sagami Bay, Japan, 35°6′30″, 139°17′E. Not seen.

Diagnosis. Carapace without lateral ridges, with setae, dorsal crest serrate. Pleonites without dorsal crest. Telson 0.8 length of uropod peduncles, with 7 pairs lateral setae, 3 equal terminal setae. Uropod exopod article 1 1.2 length of article 2. *Adult male* unknown.

Depth. 1000 m.

Distribution. Sagami Bay, Japan, 35°6′30″, 139°17′E.

Remarks. *Hemilamprops tanseianus* is unique in the genus in having long setae on the anterior–dorsal part of the carapace.

***Hemilamprops ultimaespei* Zimmer, 1921**

Hemilamprops (?) *ultimaespei* Zimmer, 1921: 3–5, figs 1–3.

Hemilamprops lotusae Băcescu, 1969: 168–171, fig. 4.—Mühlenhardt-Siegel, 2003: 125–126.

Type material. Lectotype: ovigerous female, SMNH Type-817 (part), Terre du Feu, Ultima Esperanza, southern Chile, 50°30′S, 74°W. Paralectotype: subadult female, SMNH Type-817 (part), collected with holotype.

Diagnosis. Carapace without lateral ridges, without setae, dorsal crest entire. Pleonites without dorsal crest. Telson 0.8 length of uropod peduncles, with 3 pairs lateral setae, 3 equal terminal setae. Uropod exopod article 1 0.7 length of article 2. *Adult male* unknown.

Depth. 12–18 m.

Distribution. Tierra del Fuego, Chile.

Remarks. The types do not have any ridges on the carapace, in accord with the figure in Zimmer (1921). The types were inspected closely under high magnification, and a temporary stain (chlorazole black) was applied, to highlight a ridge if present; no ridge was evident. The specimens recorded as *H. ultimaespei* in Mühlenhardt-Siegel, 2003 have a short ridge on the carapace, as shown in her figures and as observed by this author. The ridge is consistent in that material, but is simply not present in the types. In combination with the difference in the lateral

setation of the telson, the specimens recorded by Mühlenhardt-Siegel appear to be referable to a new species of *Hemilamprops*, *H. chilensis* Gerken & Haye, 2018 and not *H. ultimaspei*.

Ledoyer (1993) identified material from 610–1223 m in the Weddell Sea as *Hemilamprops ultimaspei*; however, it is clear from his illustrations that his material is neither *H. ultimaspei* nor *H. chilensis*. Ledoyer illustrated specimens without a ridge on the carapace, like *H. ultimaspei*, but the uropod endopod is shown with article 2 distinctly shorter than article 3, and in both *H. chilensis* and *H. ultimaspei* article 2 and article 3 are equal. In addition, the distribution is unlikely, especially in light of recent work (Teske *et al.* 2006) describing significant genetic structuring in closely co-located coastal populations of cumaceans. The Ledoyer material represents an undescribed species, and is thus not included in the distribution of *H. ultimaspei*. Additionally, material reported by Corbera (2000) as *H. ultimaspei* from the South Shetland Islands has the uropod endopod article 2 shorter than article 3, and therefore is also not *H. ultimaspei* (Corbera, pers. comm.).

***Hemilamprops uniplicatus* (Sars, 1872)**

Lamprops uniplicata Sars, 1872: 270.

Hemilamprops uniplicata.—Sars, 1883: 11, 56.—Sars, 1900: 24, pl. 16, 17.

Type material. Deposition unknown. Hardangerfjord and Mosterhavn, Lofoten Islands, Norway. Not seen.

Diagnosis. Carapace with one lateral ridge, without setae, dorsal crest entire. Pleonites without dorsal crest. Telson 1.0 length of uropod peduncles, with 7 pairs lateral setae, 3 equal terminal setae. Uropod exopod article 1 0.7 length of article 2. *Adult male* antenna extending to posterior border of pleonite 5; telson with pairs lateral setae.

Depth. 110–3000 m.

Distribution. Northeastern Atlantic, Arctic.

Remarks. *Hemilamprops uniplicatus* is most similar to *H. chilensis*, *H. gracilis* and *H. pterini*, but can be differentiated by the telson being equal to or longer than the uropod peduncles, while the telson is shorter than the uropod peduncles in the other species.

***Lamprops* Sars, 1863**

Lamprops Sars, 1863: 239.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender, basis equal to all other articles together. Pereopod 5 longer than pereopod 4 basis. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less, rarely longer than article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with short, modified clasping antenna, without penial lobes, without pleopods.

Species. *Lamprops beringi* Calman, 1912, *L. fasciatus* Sars, 1863, *L. fuscatus* Sars, 1865, *L. korroensis* Derzhavin, 1926, *L. northwindae* n. sp., *L. pumilio* Zimmer, 1937, *L. sarsi* Derzhavin, 1926.

Type species *Lamprops fasciatus* Sars, 1863, by monotypy.

Remarks. The original conception of this genus by Sars included species only with a clasping antennal flagellum in the adult male, thus all the species with a long, non-clasping flagellum in the male, and those species with unknown males, have been removed to *Alamprops*.

Key to the species of *Lamprops*

1. Telson less than 0.5 uropod peduncle length. *L. korroensis*
- Telson longer than 0.5 uropod peduncle length 2

2.	Carapace without lateral ridges	4
-	Carapace with at least 1 lateral ridge (may be weak)	5
3.	Uropod peduncle without medial seta	<i>L. pumilio</i>
-	Uropod peduncles with more than 4 medial setae	4
4.	Carapace without antennal notch; pseudorostrum blunt; eyelobe large	<i>L. northwindae</i>
-	Carapace with weak antennal notch; pseudorostrum pointed; eyelobe small	<i>L. fuscatus</i>
5.	Carapace with 1 lateral ridge (may be weak)	6
-	Carapace with 3 lateral ridges; telson with 1 pair long lateral setae	<i>L. fasciatus</i>
6.	Telson with 5 terminal setae; carapace lateral ridge weak	<i>L. sarsi</i>
-	Telson with 3 terminal setae; carapace lateral ridge strong	<i>L. beringi</i>

***Lamprops beringi* Calman, 1912**

Lamprops (?) beringi Calman, 1912: 630, figs 27–28.

Lamprops beringi.—Lomakina, 1958a: 86–87, fig. 34, pl. 1 fig. 4.

Type material. Holotype: USNM 13678, female. Bering Sea, North Pacific.

Diagnosis. Carapace with one lateral ridge, antennal notch weak, pseudorostrum blunt, eyelobe small. Telson 1.0 length of uropod peduncles, 6 pairs lateral setae, 3 terminal setae. Uropod peduncle with 9 medial setae. *Adult male* antennal flagellum not extending to end of thorax.

Depth. 0–129 m

Distribution. Sea of Japan, Sea of Okhotsk, Bering Sea, Northern boreal Pacific.

Remarks. There are only two species of *Lamprops* with a single lateral ridge, *L. beringi* and *L. sarsi*, and they can easily be differentiated by the number of terminal setae on the telson. In *L. beringi* there are three terminal setae, while in *L. sarsi* there are five terminal setae. Within the genus *Alamprops*, there is only one species with three terminal setae on the telson, *A. kensleyi*, which can be differentiated by the lack of any lateral ridges on the carapace

***Lamprops fasciatus* Sars, 1863**

Lamprops fasciata Sars, 1863: 236; 1900: 19, pl. 9, 10.

Type material. Deposition unknown. Trondheim Fjord, near Steinkjer, and Lofoten Islands, Norway. Not seen.

Diagnosis. Carapace with 3 lateral ridges, antennal notch present, pseudorostrum blunt, eyelobe large. Telson 1.0 length of uropod peduncles, 1 pair long lateral setae, 5 terminal setae, outer pair and central seta equal, inner pair short. Uropod peduncle with 7 medial setae. *Adult male* smaller than female.

Depth. 1–71 m.

Distribution. Barents Sea, White Sea, Baltic Sea, Northern Atlantic Boreal. The record by Given (1965) from St. Paul Island in the Bering Sea, which is unlikely to be *L. fasciatus*; it is more likely either *A. augustinensis* or a new species.

Remarks. This is the only species in *Lamprops sensu stricto* with three lateral ridges on the carapace. The only *Alamprops* with three lateral ridges on the carapace is *A. pseudosarsi*, in which the posterior most ridge is weak rather than strong, and the telson terminal setae increase in length from the lateral towards the midline, with the central seta longest. In *L. fasciatus* all three carapace ridges are strong, and the telson terminal setae have the outermost pair long, the next pair short, and the central seta is the longest.

***Lamprops fuscatus* Sars, 1865**

Lamprops fuscatus Sars, 1865: 192; 1900: 20, pl. 11.

Type material. Deposition unknown. Lofoten Islands, Norway. Not seen.

Diagnosis. Carapace without lateral ridges, antennal notch weak, pseudorostrum pointed, eyelobe small. Telson

1.1 length of uropod peduncles, 2 pairs lateral setae, 5 terminal setae. Uropod peduncle with 5 medial setae. *Adult male* smaller than female, eyelobe larger than in female.

Depth. 4–112 m.

Distribution. Northern boreal Pacific, Arctic, northern boreal Atlantic.

Remarks. The recorded distribution is very large, and unlikely to represent a single species. It is likely that specimens from the North Pacific and Arctic ascribed to *L. fuscatus* by Hart (1930), Derzhavin (1929), Lomakina (1955, 1958), and Given (1965) are *L. northwindae*, a species with a very similar carapace, or possibly several species. *Lamprops northwindae* from the Laptev Sea can be differentiated from *L. fuscatus* by the lack of an antennal notch, blunt pseudorostrum, and large eyelobe. In *L. fuscatus*, the antennal notch is weak but present, the pseudorostrum is pointed, and the eyelobe is small.

In the genus *Alamprops*, the most similar species are *A. affinis*, *A. carinatus*, *A. obfuscatus*, and *A. serratus*. In *Lamprops fuscatus*, the telson is longer than the uropod peduncles, while in *A. affinis*, *A. carinatus* and *A. obfuscatus* the telson is shorter than or equal to the uropod peduncles. The most similar species *A. serratus*, which has a strongly serrate anterolateral corner on the carapace, and the telson terminal setae have the outermost pair long, and the central three setae are equal in length and short. In *L. fuscatus*, the anterolateral corner of the carapace is smooth, and the telson terminal setae are all long, with the outermost pair slightly longer than the central three setae.

***Lamprops korroensis* Derzhavin, 1923**

Lamprops korroensis Derzhavin, 1923: 182, pl. 2, 5.—Lomakina, 1958a: 95–96, fig. 43.

Type material. Deposition unknown. Kamchatka Peninsula, USSR. Not seen.

Material examined. Adult male, ovigerous female, ZMB 23064.

Diagnosis. Carapace without lateral ridges, antennal notch absent, pseudorostrum blunt, eyelobe small. Telson 0.5 length of uropod peduncles, lateral setae absent, 5 terminal setae, outer pair and central seta long, inner pair short. Uropod peduncle with 6 medial setae. *Adult male* smaller than female, eyelobe larger than female, with lenses.

Depth. 4–16 m.

Distribution. Kamschatka Peninsula, Soviet Union.

Remarks. This species is recorded from brackish and freshwater basins on the Kamschatka Peninsula (Derzhavin 1926), not marine waters. This is the only lampropid reported from waters that are not marine or estuarine. Within *Lamprops* and *Alamprops*, this is the only species in which the telson is approximately 0.5 the length of the uropod peduncles.

***Lamprops northwindae* n. sp.**

(Figs 29–32)

Type material. Holotype: subadult female, LACM CR 10839, 74°N, 134°E, 10–20 m, Laptev Sea, collected by USCGC Northwind, August–September 1963, station 158. Paratypes: subadult female, dissected, LACM CR 10840, collected with holotype; adult male, dissected, LACM CR 10841, collected with holotype.

Other material. Adult male, 73°12'N, 134°E, 10–20 m, Laptev Sea, collected by USCGC Northwind, August–September 1963, station 111.

Diagnosis. Carapace without lateral ridges, antennal notch absent, pseudorostrum pointed, eyelobe large. Telson 1.1 length of uropod peduncles, 2–3 pairs lateral setae, 5 terminal setae. Uropod peduncle with 5 medial setae. *Adult male* smaller than female, antenna extending to end of carapace, pseudorostrum blunt; telson 1.2 length of uropod peduncles, with 1–2 pairs lateral setae, terminal setae long

Description. Holotype subadult female, LACM CR 10839.

Holotype subadult female, 2.3 mm. Carapace smooth, antennal notch oblique; pseudorostral lobes 0.5 carapace length; eyelobe 0.1 carapace length, no lenses; carapace longer than pereonites together (Fig. 29A, B).

Paratype subadult female, LACM CR 10840.

Paratype subadult female, 2.3 mm. Antennule peduncle article 1 longer than article 2, with 1 simple and 1 pappose setae; article 2 unarmed; article 3 equal to article 2, unarmed; main flagellum of 2 articles, as long as peduncle article 3, with 4 simple and 2 aesthetasc setae; accessory flagellum equal to first article of main flagellum, of 3 articles, with simple setae terminally (Fig. 29C).

Antenna of 4 articles, article 3 and 4 subequal, with 1 or 2 pappose setae per article (Fig. 29D).

Mandible broken, navicular, with 8 microsetate setae medially, *lacinia mobilis* with 3 cusps (Fig. 29E)

Maxillule with 2 endites; outer endite with double row of simple setae; inner endite with 4 simple and 1 pappose setae; palp with 2 microsetate setae (Fig. 29F).

Maxilla with 3 endites; broad endite distal margin with simple setae, medial margin with 11 simple setae; medial narrow endite with 4 simple setae terminally; distal narrow endite with 5 simple setae terminally; both narrow endites extend past distal margin of broad endite (Fig. 29G).

Maxilliped 1 basis produced distally as blunt lobe, distal margin with simple and pappose setae; ischium absent; merus unarmed; carpus medial face lined with simple and comb setae, distal corner with 1 pappose seta; propodus medial face with simple setae, 1 pappose seta distally; dactylus with 3 simple setae terminally (Fig. 29H).

Maxilliped 2 basis longer than all other articles together, with 4 plumose setae distally; ischium unarmed; merus 0.2 basis length, with 1 plumose seta distally; carpus 1.5 merus length, 3 simple setae medially, 1 plumose seta distally; propodus 0.8 carpus length, 5 simple setae medially, 1 plumose and 1 pappose setae distally; dactylus 0.5 propodus length, 3 simple setae terminally (Fig. 29I).

Maxilliped 3 basis longer than all other articles together, expanded distally, medial margin with 6 pappose setae, distal corner with 3 plumose setae; ischium unarmed; merus 0.2 basis length, 1 medial and 1 distal pappose setae; carpus equal to merus, 2 medial pappose and 1 distal simple setae; propodus equal to carpus, with 1 simple seta; dactylus 0.5 propodus length, 3 simple setae terminally; exopod as long as basis, basal article unarmed, flagellum with plumo-annulate setae (Fig. 30A).

Pereopod 1 basis longer than next 4 articles together, with 9 medial and 4 lateral pappose setae; ischium 0.25 merus length, unarmed; merus equal to carpus length, with 2 pappose setae; carpus 0.75 propodus length, with 2 pappose setae; propodus with 1 simple seta; dactylus 0.75 propodus length, with 1 simple seta and 4 simple setae terminally; exopod as long as basis, basal article with 1 pappose seta, flagellum with plumo-annulate setae (Fig. 30B).

Pereopod 2 basis longer than next 4 articles together, with 8 pappose and 1 plumose setae medially, 1 pappose seta distally; ischium unarmed; merus 0.2 basis length, with 2 stout microsetate setae medially; carpus twice length of merus, with 6 microsetate setae medially; propodus 0.5 carpus length with 1 stout microsetate seta medially; dactylus 1.4 propodus length, with 1 simple seta and 3 simple setae terminally; exopod longer than basis, ischium and merus together, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 30C).

Pereopod 3 basis longer than all other articles together, 7 pappose and 1 plumose setae; ischium 0.1 basis length, with 4 annulate setae; merus 1.5 ischium length, unarmed; carpus equal to merus, with 3 annulate setae; propodus 0.7 carpus, with 1 annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod rudimentary, of 2 articles, 0.3 basis length (Fig. 4D).

Pereopod 4 not illustrated.

Pereopod 5 basis as long as next 4 articles together, unarmed; ischium 0.1 basis length, with 4 annulate setae; merus 2.3 ischium length, with 4 annulate setae; carpus 1.3 merus length, with 1 simple and 3 annulate setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.75 propodus length, with 2 simple setae terminally (Fig. 30E).

Telson 2.4 length of pleonite 6, with 3 lateral setae with single subterminal setule, 5 terminal simple setae (Fig. 30F)

Uropod peduncles 2.1 pleonite 6 length, 0.9 telson length, with 5 medial simple setae with single subterminal setule. Uropod endopod of 3 articles, 1.3 peduncle length; article 1 longer than articles 2 and 3 together, with 5 medial and 1 lateral setae with single subterminal setule; article 2 0.4 article 1 length, with 2 medial simple setae with single subterminal setule; article 3 equal to article 2, with 2 medial and 1 lateral setae with single subterminal setule, terminal seta simple, longer than article 3. Uropod exopod 0.8 length of endopod; article 1 with 1 seta with single subterminal setule; article 2 1.2 length of article 1, with 4 medial simple setae, 2 lateral simple setae and 2 lateral setae with single subterminal setule, terminal seta longer than article 2, simple (Fig. 30F).

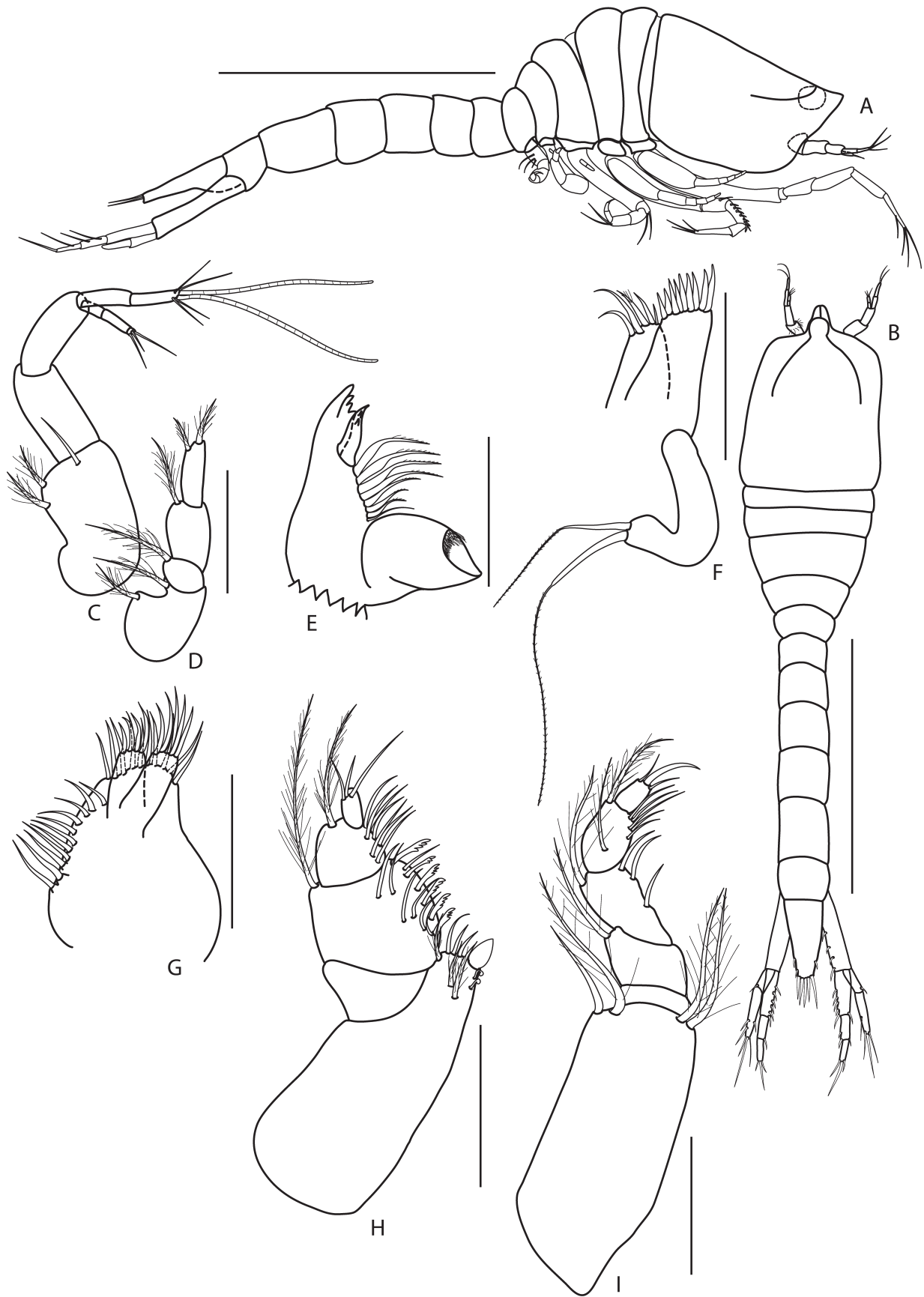


FIGURE 29. *Lamprops northwindae* n. sp. Holotype ovigerous female LACM CR 10839, A, side view; B, dorsal view. Paratype ovigerous female LACM CR 10840, C, antennule; D, antenna; E, mandible; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

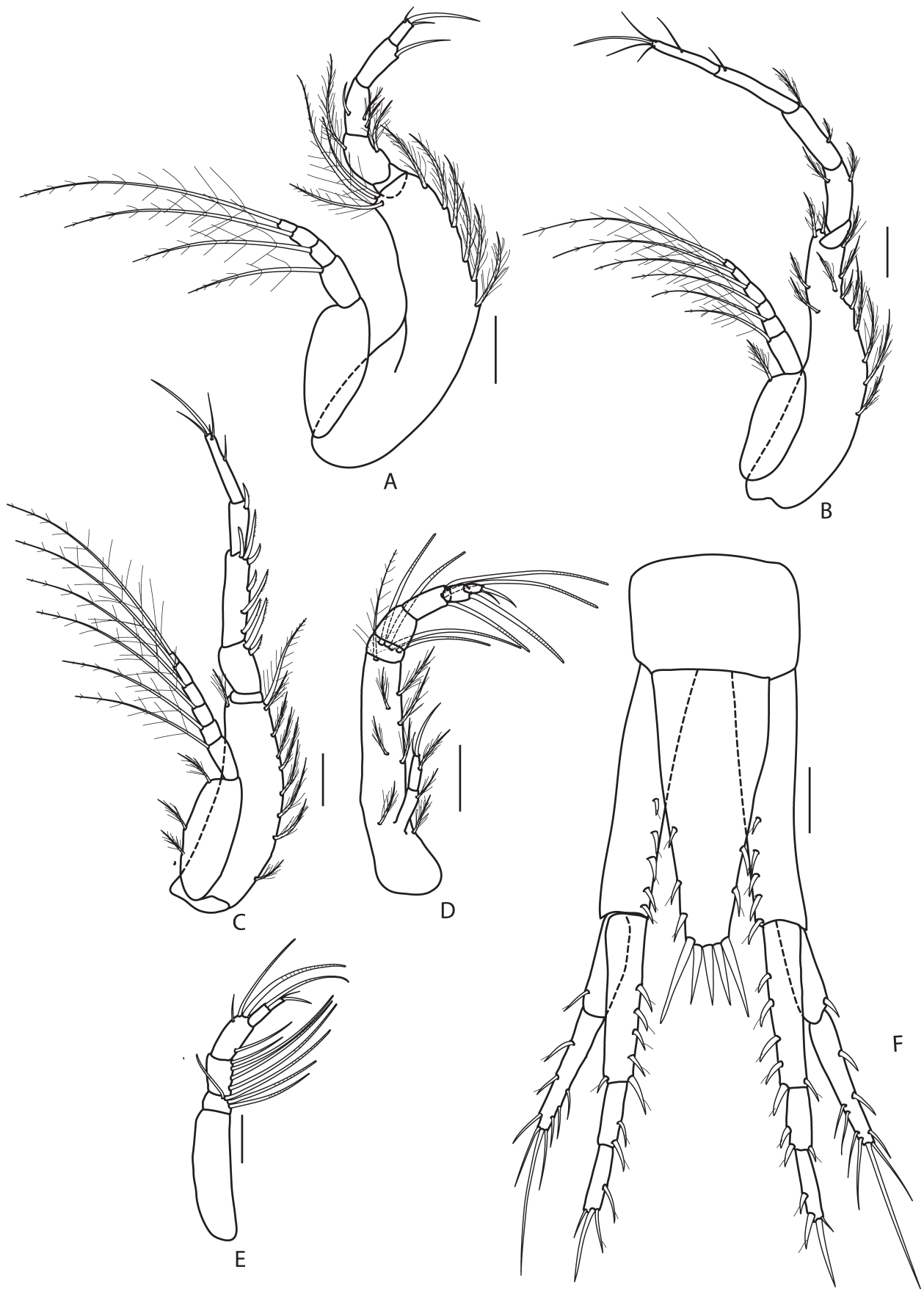


FIGURE 30. *Lamrops northwindae* n. sp. Paratype ovigerous female LACM CR 10840, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

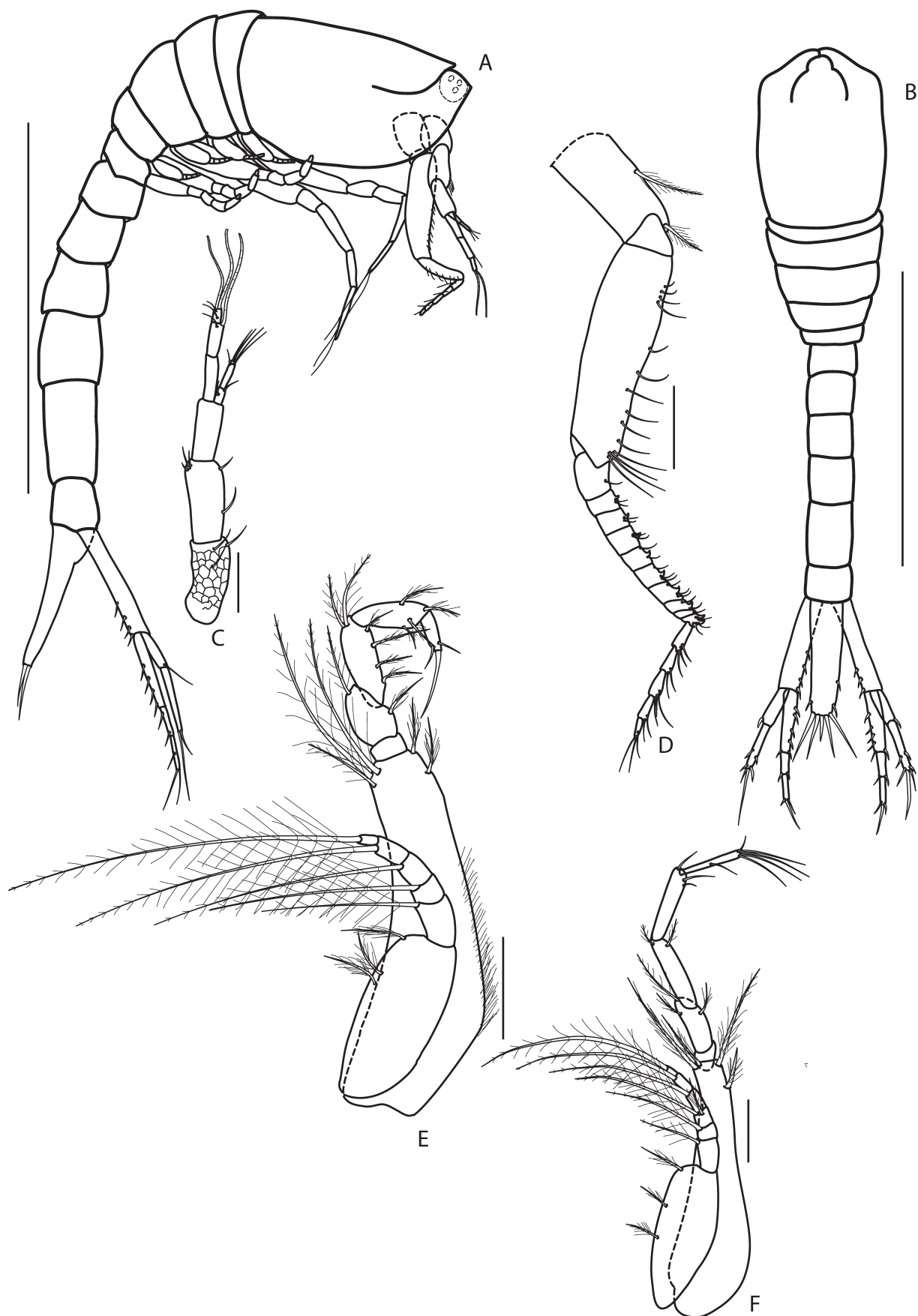


FIGURE 31. *Lamrops northwindae* n. sp. Paratype adult male LACM CR 10841, A, side view; B, dorsal view; C, antennule; D, antennae; E, maxilliped 3; F, pereopod 1. Scale bars full body 1.0 mm, all others 0.1 mm.

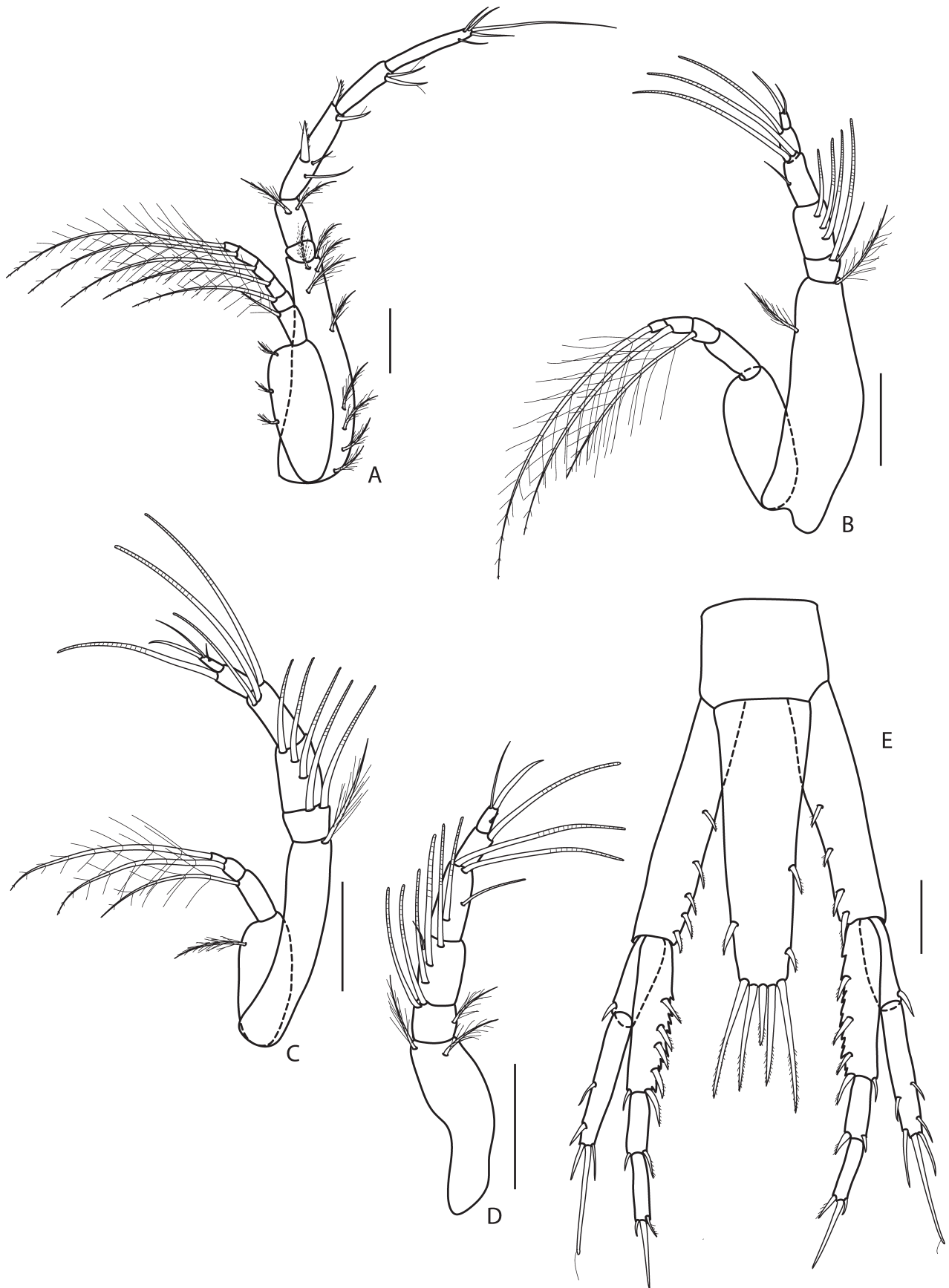


FIGURE 32. *Lamprops northwindae* n. sp. Paratype adult male LACM CR 10841, A, pereopod 2; B, pereopod 3; C, pereopod 4; D, pereopod 5; E, telson and uropods. Scale bars 0.1 mm.

Paratype adult male, LACM CR 10841.

Adult male, 1.8 mm. Carapace smooth, no trace of antennal notch; pseudorostral lobes 0.25 carapace length; eyelobe 0.1 carapace length; carapace longer than pereonites together (Fig. 31A, B).

Antennule including setae as long as antenna; peduncle article 1 equal to article 2, with 3 simple setae, surface scaled; article 2 with few simple setae; article 3 0.7 article 2 length, unarmed; main flagellum equal to article 1 length, of 3 articles, with 3 simple and 3 aethetasc setae; accessory flagellum as long as article 1 of main flagellum, of 3 articles, with simple setae (Fig. 31C).

Antenna peduncle of 3 articles, first article broken, with 2 plumose setae; next article short, unarmed; final article with few simple setae, not arranged in ranks; flagellum shorter than peduncle, first 10 articles with anterior tooth, as a section curved anteriorly, final 5 articles without tooth, as a section pointed posteriorly, this type of flagellum is interpreted as a clasping flagellum that wraps around the pereon of the female during mating (Fig. 31D).

Maxilliped 3 basis twice as long as all other articles together, with 2 medial pappose setae and 3 plumose setae at distal corner; ischium 0.05 basis length, unarmed; merus 2.7 length of ischium, with 1 medial pappose and 1 distal plumose setae; carpus equal to merus, with 4 medial pappose and 2 distal plumose setae; propodus equal to carpus, with 2 medial and 2 distal pappose setae; dactylus 0.75 propodus length, with 3 simple setae terminally; exopod equal to basis, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 31E).

Pereopod 1 basis as long as all other articles together, with 4 pappose setae distally; ischium unarmed; merus 0.2 basis length, with 1 plumose and 2 pappose setae; carpus 0.6 merus length, with 2 pappose setae; propodus equal to carpus, with 3 simple setae; dactylus 0.8 propodus length, with 5 simple setae terminally; exopod as long as basis, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 31F).

Pereopod 2 basis as long as next 3 articles together, with 9 pappose setae; ischium 0.1 basis length, unarmed; merus 1.75 ischium length, with 2 pappose setae; carpus 2.7 merus length, with 2 microserrate, 1 simple and 2 with subterminal setule setae; propodus 0.6 carpus length, with 2 setae with subterminal setule; dactylus 1.5 propodus length, with 5 simple setae terminally; exopod as long as basis, ischium and merus together, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 32A).

Pereopod 3 basis longer than all other articles together, with 2 pappose setae; ischium 0.1 basis length, with 1 annulate and 1 simple setae; merus 2.5 ischium length, with 3 annulate setae; carpus 0.9 merus length, with 1 simple and 2 annulate setae; propodus 0.6 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod longer than basis and ischium together, basal article unarmed, flagellum with plumo-annulate setae (Fig. 32B).

Pereopod 4 basis as long as next 4 articles together, with 1 pappose seta; ischium 0.2 basis length, with 2 annulate setae; merus twice ischium length, with 3 annulate setae; carpus equal to merus, with 3 annulate setae; propodus 0.5 carpus length with 1 annulate seta; dactylus 0.7 propodus length, with 3 simple setae terminally; exopod longer than basis, basal article with 1 pappose seta, flagellum with plumo-annulate setae (Fig. 32C).

Pereopod 5 basis as long as next 3 articles together, with 2 pappose setae; ischium 0.2 basis length, with 1 pappose and 2 annulate setae; merus 1.6 ischium length, with 1 simple and 3 annulate setae; carpus 0.2 merus length, with 3 annulate setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.7 propodus length, with 2 simple setae terminally (Fig. 32D).

Telson 2.9 length of pleonite 6, with 1 or 2 microserrate setae, 5 long terminal microserrate setae (Fig. 32F).

Uropod peduncles 2.3 length of pleonite 6, 0.8 length of telson, with 4–5 microserrate setae medially. Uropod endopod of 3 articles, equal to peduncle; article 1 longer than articles 2 and 3 together, medial margin serrate, with 4–5 microserrate setae medially, 1 simple seta distally; article 2 0.4 length of article 1, with 1 medial microserrate seta and 1 lateral simple seta; article 3 1.1 length of article 2, with 1 medial microserrate and 1 lateral simple setae, terminal seta as long as article 3, simple. Uropod exopod 0.8 length of endopod; article 1 0.6 length of article 2, with 1 lateral simple seta; article 2 with 3 lateral and 1 medial simple setae, terminal seta 0.8 article 2 length, with single subterminal setule (Fig. 32F).

Etymology. The species is named after the U.S. Coast Guard ship *Northwind*, the vessel from which the specimens were collected.

Depth. 10–20 m.

Distribution. Laptev Sea, 74°N, 119°E and 73°12'N, 134°E, estimated from cruise report station location (USCG 1965).

Remarks. The most similar species is *Lamprops fuscatus*. The new species can be distinguished by the combination of no antennal notch, blunt pseudorostrum and a large eyelobe. In comparison, *L. fuscatus* has a weak antennal notch, pointed pseudorostrum, and a small eyelobe. In addition, *L. northwindae* n. sp. is known from the North Pacific, while *L. fuscatus* was originally described from the North Atlantic. It is probable that the records of *L. fuscatus* from the boreal Pacific are actually *L. northwindae* or related species. *Lamprops northwindae* has the telson longer than the uropod peduncles in both sexes, which differentiates it from the similar species in *Alamprops*, *A. affinis*, *A. carinatus*, *A. obfuscatus*, in which the telson is shorter or subequal to the uropod peduncles in length. *Lamprops northwindae* has no antennal notch, and the anterolateral corner is entire, unlike *A. serratus* in which the antennal notch is present and the anterolateral corner is strongly serrate.

***Lamprops pumilio* Zimmer, 1937**

Lamprops pumilio Zimmer, 1937: 41, figs 5–7.—Lomakina, 1958a: 89–90, fig. 37.

Type material. Deposition unknown. Sea of Okhotsk, 59°32'N, 150°40'E. Not seen.

Diagnosis. Carapace without lateral ridges, antennal notch absent, pseudorostrum pointed, eyelobe small. Telson 0.9 length of uropod peduncles, 0 pairs lateral setae, 5 terminal setae. Uropod peduncle without medial setae. *Adult male* antennal flagellum reaches to end of pereon.

Depth. 20–25 m.

Distribution. Okhotsk Sea, 59°32'N, 150°40' E, and Kurile Islands.

Remarks. The most similar species is *Lamprops korroensis*; however, *L. korroensis* is found in brackish and fresh water on the Kamchatka Peninsula, and *L. pumilio* is a marine species. In addition, the telson in *L. korroensis* is less than 0.5 the uropod peduncle length, while in *L. pumilio* the telson is more than 0.5 the uropod peduncle length.

Lamprops pumilio has no antennal notch, the anterolateral corner is entire, the pseudorostral lobes meet and extend a considerable way anterior of the eyelobe, and the telson terminal setae increase in length from the lateral to the midline, with the central seta the longest. In comparison, *Alamprops affinis* has the pseudorostrum extending barely anterior of the eyelobe, and the telson terminal setae are all equal in length. In *A. carinatus* the carapace has antennal notch. In *A. obfuscatus* the telson terminal setae have the outermost pair long, the next pair short, and the central seta longest. In *A. serratus*, the antennal notch is present, and the anterolateral corner is strongly serrate.

***Lamprops sarsi* Derzhavin, 1926**

Lamprops sarsi Derzhavin, 1926: 177–178.—Lomakina, 1958a: 88–89, fig. 36.

Type material. Deposition unknown. Kamchatka Peninsula, USSR. Not seen.

Diagnosis. Carapace without lateral ridges, antennal notch absent, pseudorostrum pointed, eyelobe small. Telson 1.0 length of uropod peduncles, 0 pairs lateral setae, 5 terminal setae. Uropod peduncle with 1 medial seta. *Adult male* entire antenna including flagellum only as long as uropod.

Depth. 0–92 m.

Distribution. Northern boreal Pacific, Bering Sea.

Remarks. There is only one other species of *Lamprops* with a single lateral ridge on the carapace, *L. beringi*; however, *L. beringi* and *L. sarsi* can be differentiated by the telson setation. In *L. beringi* the telson has 3 terminal setae, while in *L. sarsi* the telson has 5 terminal setae. The most similar species in *Alamprops* is *A. pseudosarsi*, which has three ridges on the carapace, although the posterior ridge may be quite weak.

The placement of this species in *Lamprops* is quite clear, as the male is without pleopods and the antenna 2 is quite short. However, uropod exopod article 1 is distinctly longer than article 2, which suggests that the use of uropod exopod article ratios is not an exceptionally useful character to differentiate genera.

Mesolamprops Given, 1964

Mesolamprops Given, 1964: 288.

Type species. *Mesolamprops bispinosus* Given, 1964, by original designation.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender, basis as long as all other articles together. Pereopod 5 longer than pereopod 4 basis. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with long antenna, extending past pereon, without penial lobes, with 2 pairs of pleopods.

Species. *Mesolamprops abyssalis* Reyss, 1978a, *M. bispinosus* Given, 1964, *M. denticulatus* Ledoyer, 1988, *M. dillonensis* Gladfelter, 1975, *M. hartleyi* Shalla & Bishop, 2007, *M. japonicus* (Zimmer, 1937).

Remarks. Given's original description (1964) of the genus included reduced pleopods in the male, in which the exopod, or lateral ramus, which is normally bi-articulate is reduced to a small projection. However, subsequent papers (Gladfelter 1975; Reyss 1978a; Ledoyer 1983) included species that possess two pairs of pleopods, but the state of the pleopods varies from that described by Given (1964). In *Mesolamprops dillonensis*, the pleopod is illustrated with equal rami, with a bi-articulate lateral ramus and a uni-articulate medial ramus. In *M. abyssalis* the pleopod is illustrated with 2 equally small uni-articulate rami, and in *M. denticulatus* the pleopod is illustrated with unequal rami, and the shorter lateral ramus is bi-articulate. The pleopod was not illustrated for *M. hartleyi* by Shalla & Bishop (2007). The only species with a pleopod that is like that of *M. bispinosus* is *M. japonicus*. In the additional description of *M. japonicus* provided by Tsareva (1999), it is clearly illustrated with a pleopod in which the lateral ramus is reduced to a small projection.

The species described by Gamô (1999) as *Mesolamprops bacescui* is clearly a member of the Diastylidae, as it has long articles in the male antennal flagellum, two pairs of pleopods without the medial process in the adult male, two terminal setae on the telson in both males and females, and distinct pre and post-anal sections of the telson. In comparison, all male lampropids with fully developed pleopods have a process on the medial ramus, short articles in the adult male antenna flagellum, no obvious pre and post-anal division of the telson, and three or more terminal setae on the telson. Thus, this species is hereby referred to *Diastylis*, as *Diastylis bacescui* (Gamô 1999) comb. nov.

Key to the species of *Mesolamprops*

- | | | |
|----|---|------------------------|
| 1. | Carapace with ridges | <i>M. dillonensis</i> |
| - | Carapace without lateral ridges | 2 |
| 2. | Telson with 5 terminal setae | 3 |
| - | Telson with 3 terminal setae | 5 |
| 3. | Telson with 2 pairs lateral setae | 4 |
| - | Telson without lateral setae | <i>M. abyssalis</i> |
| 4. | Pleon (not including telson) distinctly shorter than carapace and pereonites together | <i>M. bispinosus</i> |
| - | Pleon (not including telson) about as long as carapace and pereonites together | <i>M. japonicus</i> |
| 5. | Dorsal crest denticulate | <i>M. denticulatus</i> |
| - | Dorsal crest entire | <i>M. hartleyi</i> |

***Mesolamprops abyssalis* Reyss, 1978a**

Mesolamprops abyssalis Reyss, 1978a: 7–10, fig. 3A–F, fig. 4A–G.

Type material. Deposition unknown. Gay Head, Bermuda Transect, 36°23'N, 67°58'W. Not seen.

Diagnosis. Carapace without lateral ridges, dorsal crest entire. Pleon not including telson equal to carapace and pereonites together. Telson without lateral setae, 5 terminal setae. *Adult male* antennal flagellum short, not extending to end of pereon; pleopod rami equal, uniarticulate.

Depth. 4667–4862 m.

Distribution. North Atlantic, 35–37°N, 63–68°W.

Remarks. The only other species in *Mesolamprops* that have five terminal setae on the telson are *M. bispinosus* and *M. japonicus*, but in *M. abyssalis* the terminal setae are nearly equal in the female, and in the male the central seta is the longest. However, in *M. bispinosa* and *M. japonicus* the outer most pair of terminal setae are the longest, and the inner pair are shorter than the central seta. In addition, the pseudorostrum is distinctly produced in *M. abyssalis*, while *M. bispinosa* and *M. japonicus* have no obvious anteriorly projecting pseudorostrum.

***Mesolamprops bispinosus* Given, 1964**

Mesolamprops bispinosus Given, 1964: 289–291, figs. 1A–K, 2A–I.

Type material. Holotype: adult male, AHF 5917, held by LACM. Paratype: female, held by LACM. Not seen. Off the coast of Los Angeles, 33°38'45"N, 118°14'45"W.

Diagnosis. Carapace without lateral ridges, dorsal crest entire. Pleon not including telson shorter than carapace and pereonites together. Telson with 2 pairs lateral setae, 5 terminal setae, outer pair longest, inner pair short. *Adult male* antennal flagellum “long”, extending at least to the mid-pleon; pleopod rami unequal, uniarticulate, lateral ramus smaller than medial ramus.

Depth. 30–100 m.

Distribution. Eastern Pacific continental shelf, south of Point Conception.

Remarks. The most similar species is *Mesolamprops japonicus*; however, in *M. japonicus* the pleon (not including the telson) is longer than the carapace and pereonites together, while in *M. bispinosa* the pleon (not including the telson) is shorter than the carapace and pereonites together.

***Mesolamprops denticulatus* Ledoyer, 1988**

Mesolamprops denticulatus Ledoyer, 1988: 73–74, fig. 4.

Type material. Holotype: MNHN-CU246, male. Canyon du Planier, off Marseille.

Diagnosis. Carapace without lateral ridges, dorsal crest denticulate. Pleon not including telson shorter than carapace and pereonites together. Telson with 4 pairs lateral setae, 3 terminal setae. *Adult male* antennal flagellum short, extending to end of pereon; pleopod rami unequal, lateral ramus biarticulate, shorter than medial ramus.

Depth. 259–753 m.

Distribution. Mediterranean Sea, Faroe-Shetland Channel.

Remarks. This is the only *Mesolamprops* with a denticulate dorsal crest. *Mesolamprops denticulatus* was considered a Mediterranean endemic prior to the records from the Faroe-Shetland Channel reported by Shalla & Bishop (2007), although these records were evidently overlooked by Coll *et al.* (2010) who treated the species as a Mediterranean endemic.

***Mesolamprops dillonensis* Gladfelter, 1975**

Mesolamprops dillonensis Gladfelter, 1975: 246–247, fig. 3.

Type material. Holotype: USNM 43867, adult male. Dillon Beach, California.

Diagnosis. Carapace with 2 lateral ridges, dorsal crest entire. Pleon not including telson shorter than carapace and pereonites together. Telson with 6 lateral setae, 3 terminal setae, central seta short. *Adult male* antennal flagellum long, extending to end of pleon; pleopod rami equal, lateral ramus biarticulate, medial ramus uniarticulate.

Depth. 13–21 m.

Distribution. Dillon Beach, California, 38°N, 123°W.

Remarks. This is the only species of *Mesolamprops* with lateral ridges on the carapace.

***Mesolamprops hartleyi* Shalla & Bishop, 2007**

Mesolamprops hartleyi Shalla & Bishop, 2007: 1196–1199, figs 4–5.

Type material. Holotype: NMSZ 2005.061.0001, adult male. Paratypes: NMSZ 1999.217.0872, immature male; NMSZ 2005.061.0002, preparatory female; NMSZ 2005.061.0003, adult male. 61°7.06'N, 1°18.42'E. Not seen.

Diagnosis. Carapace without lateral ridges, dorsal crest entire. Pleon not including telson longer than carapace and pereonites together. Telson with 4 pairs lateral setae, 3 terminal setae, central seta longest. *Adult male* antennal flagellum long, extending to pereonite 4, pleopods not figured.

Depth. 155–240 m.

Distribution. North Sea, North Atlantic, 61°N, 1°E.

Remarks. The most similar species to *Mesolamprops hartleyi*, in terms of the carapace morphology, are *M. bispinosus* and *M. japonicus*. However, they can be differentiated from the *M. hartleyi* by the length of the telson, being about 0.8 the length of the uropod peduncles in *M. hartleyi*, and equal to the uropod peduncles in the other two species.

***Mesolamprops japonicus* (Zimmer, 1937)**

Lamprops (?) *japonicus* Zimmer, 1937: 42, figs 8–10.—Lomakina, 1958a: 94, fig. 41.

Mesolamprops japonica Tsareva, 1999: 431–433, figs 1–3.

Type material. Holotype: male. Deposition unknown. Not seen.

Diagnosis. Carapace without lateral ridges, dorsal crest entire. Pleon not including telson equal to carapace and pereonites together. Telson with 2 pairs lateral setae, 5 terminal setae, outer pair longest, inner pair short. *Adult male* antennal flagellum long, extending to end of pereon; pleopod rami unequal, uniarticulate, lateral ramus smaller than medial ramus.

Depth. 10–63 m.

Distribution. Tatarsk Strait; Peter the Great Bay, Sea of Japan, 42°40'N, 131°50'E.

Remarks. *Lamprops japonicus* was redescribed by Tsareva, 1999, with complete descriptions of males and females, and referred to *Mesolamprops*. The most similar species is *M. bispinosus*, which can be differentiated by the pleon length. In *M. bispinosus* the pleon (not including the telson) is shorter than the carapace and pereonites together, while in *M. japonicus* the pleon (not including the telson) is longer than the carapace and pereonites together.

***Misceolamprops* Corbera, 2006**

Misceolamprops Corbera, 2006: 150.

Type species. *Misceolamprops dolorsae* Corbera, 2006, by original designation and monotypy.

Diagnosis. Carapace dorsoventrally flattened, with marginal carina, eyelobe present, pseudorostral lobes short, blunt, excavate in dorsal view. Antennule flagella unequal, accessory flagellum shorter than 0.5 article 1 of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with long antenna, extending to end of pleon, without penial lobes, with 3 pairs of pleopods.

Species. *Misceolamprops dolorsae* Corbera, 2006, *M. concavus* n. sp.

Remarks. *Misceolamprops* shares a small accessory flagellum of the antennule with *Pseudodiastylis*, *Bathylamprops*, and *Chalarostylis*. However, *Misceolamprops* is strongly dorso-ventrally flattened and has a marginal carina, and none of the other genera with a small accessory flagellum are flattened, with a marginal carina.

Key to the species of *Misceolamprops*

- 1. Uropod peduncles with 7 or more setae *M. concavus*
- Uropod peduncles 4 or fewer setae *M. dolorsae*

Misceolamprops concavus n. sp.

(Figs 33–36)

Type material. Holotype: subadult female, NMV J62277, 38°10'18"S, 149°57'12"E, 592 m, 14 October 1984. Paratypes: subadult female, dissected, NMV J62278, 42°00'12"S, 148°37'42"E, 720 m, 27 July 1986; subadult female, dissected, NMV J62279, 38°10'18"S, 149°57'12"E, 592 m, 14 October 1984; adult male, dissected, AM 101482 33°46'S, 151°55'E, 713 m, 8 December 1980.

Diagnosis. Carapace branchial regions not inflated. Uropod peduncles with 7 setae medially.

Description. Paratype subadult females, NMV J62278, NMV J62279.

Subadult female, 12.2 mm. Carapace dorsoventrally flattened, in dorsal view anterior margin concave, antennules within the concavity, marginal carina serrate; pereonites 2 and 3 with large dorsally directed process; pseudorostral lobes 0.26 carapace length; eyelobe 0.04 carapace length, no lenses; carapace 2.5 length of pereonites together (Fig. 33A, B).

Antennule peduncle article 1 longest, margin serrate, with 8 simple setae; article 2 0.5 article 1 length, margins serrate, with 4 simple and 1 plumose setae; article 3 0.75 article 2 length, with 1 plumose seta; main flagellum of 4 articles, with 2 simple setae and 2 aesthetascs; accessory flagellum 0.5 length of article 1 of main flagellum, of 2 articles, with 4 simple setae (Fig. 33C).

Antenna 0.8 length of antennule peduncle article 1; article 1 with serrate margin, pappose seta; article 2 margin produced as large tooth, with pappose seta; article 3 margin produced as large teeth, unarmed; article 4 with 2 simple and 1 pedunculate setae (Fig. 33C).

Mandible navicular, with row of 10 microserrate setae medially, *lacinia mobilis* with 3 long cusps (Fig. 33D).

Maxillule with 2 endites; outer endite with triple row of stout setae terminally; inner endite with 1 simple and 3 dentate setae; palp with 2 setae (Fig. 33E).

Maxilla with 3 endites; broad endite distal margin with pappose, microserrate and simple setae, medial margin with row of 30 simple setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 5 microserrate setae terminally; both narrow endites extending to distal margin of broad endite (Fig. 33F).

Maxilliped 1 basis produced distally as broad lobe, distal margin of lobe with 2 microserrate knoblike setae, 2 simple and 1 pappose setae, margins with 2 hook, 2 simple and 4 plumose setae; ischium absent; merus expanded distally, interface between merus and carpus diagonal rather than horizontal, with 1 tooth and pappose seta at distal corner; carpus with 14 pappose, 1 simple and 6 comb setae medially, lateral margin produced as large teeth, with pappose seta; propodus lateral margin produced as large teeth, with pappose seta, medial margin with 4 pappose and 2 simple setae; dactylus with 4 simple setae terminally (Fig. 33G).

Maxilliped 2 basis 1.2 as long as all other articles together, with pappose seta medially, 1 pappose and 1 plumose setae at distolateral corner, distolateral corner expanded; ischium 0.08 basis length, with 2 pappose setae, produced as tooth distally; merus equal to ischium length, with pappose seta; carpus 4.4 merus length, with 7 pappose setae; propodus 0.7 carpus length, with 4 pappose, 2 plumose and 2 simple setae; dactylus 0.5 propodus length, with 4 simple setae (Fig. 33H).

Maxilliped 3 basis 1.4 all other articles together, with 6 pappose and 3 plumose setae, not expanded distally; ischium 0.02 basis length, unarmed; merus 4.0 ischium length, with 3 pappose and 2 plumose setae; carpus 2.9 merus length, with 13 pappose setae; propodus 0.8 carpus length, with 10 pappose setae; dactylus 0.4 propodus length, with 4 simple setae terminally; exopod 0.9 basis length, basal article serrate, flagellum with plumo-annulate setae (Fig. 33I).

Pereopod 1 basis longer than next 4 articles together, margins serrate distally, with 20 pappose and 1 simple setae; ischium 0.04 basis length, with 2 pappose setae; merus 2.3 ischium length, with 4 pappose setae; carpus 3.3 merus length, with 8 pappose setae; propodus 0.9 carpus length, with 6 pappose setae; dactylus broken; exopod 0.8 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 34A).

Pereopod 2 basis longer than next 4 articles together, with 3 pappose setae; ischium 0.05 basis length, with

pappose seta and microserrate seta with single subterminal setule; merus 2.3 ischium length, with pappose seta and microserrate seta with single subterminal setule; carpus 4.9 merus length, with 7 pappose setae and 8 microserrate setae with single subterminal setule; propodus 0.2 carpus length, with 2 simple setae; dactylus 3.0 propodus length, with 3 simple setae terminally; exopod 0.8 s basis length, basal article with 5 pappose setae, flagellum with plumo-annulate setae (Fig. 34B).

Pereopod 3 basis 2.06 all other articles together, produced as single large tooth, with 3 pappose setae; ischium 0.06 basis length, with 4 simple setae; merus 1.75 ischium length, with 2 simple setae; carpus 1.6 merus length, with 1 simple and 2 annulate setae; propodus 0.7 carpus length, with 1 simple and 1 annulate setae; dactylus 0.6 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.07 basis length, of 2 articles with 2 simple setae (Fig. 34C).

Pereopod 4 basis 1.6 all other articles together, with 1 simple and 1 plumose setae; ischium 0.05 basis length, with simple seta; merus 3.0 ischium length, with 5 simple setae; carpus 1.4 merus length, with 2 simple and 1 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.4 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.09 basis length, of 2 articles with 2 simple setae (Fig. 34D).

Pereopod 5 basis as long as next 4 articles together, with 1 plumose and 4 simple setae; ischium 0.2 basis length, with simple seta; merus 1.6 ischium length, with 2 simple setae; carpus 1.5 merus length, with 3 simple and 1 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.7 propodus length, with 3 simple setae terminally (Fig. 34E).

Telson 2.8 length of pleonite 6, with 4–5 lateral setae with single subterminal setule, 3 simple terminal setae (Fig. 34F).

Uropod peduncles 3.0 length of pleonite 6, 1.05 telson length. Uropod endopod 0.75 peduncle length; article 1 1.2 articles 2 and 3 together, with 12 setae with single subterminal setule medially; article 2 0.3 article 1 length, with 4 setae with single subterminal setule medially; article 3 1.4 article 2 length, with 5 setae with single subterminal setule medially, terminal seta with single subterminal setule 0.7 article 3 length. Uropod 0.95 length of endopod; article 1 equal to article 2 length, with 5–6 simple setae laterally; article 2 with 7–8 setae with single subterminal setule laterally, 6 setae with single subterminal setule medially, terminal seta with single subterminal setule 0.6 article 2 length (Fig. 34F).

Paratype adult male, AM P101482.

Adult male, 10.0 mm. Carapace dorsoventrally flattened, anterior margin concave in dorsal view, marginal carina with fine serrations, frontal lobe with medial carina; pereonites 1–3 with paired dorsal tubercles, pereonites 3–5 with unpaired ventral processes; pseudorostral lobes 0.35 carapace length; eyelobe 0.06 carapace length, with 2 lenses; carapace 1.5 length of pereonites together (Fig. 35A, B).

Antennule peduncle article 1 longest, margin serrate, with 9 plumose setae; article 2 0.6 article 1 length, margin serrate, with 5 plumose setae; article 3 0.6 article 2 length, unarmed; main flagellum of 4 articles, first article expanded with many aesthetascs, with 2 aesthetascs terminally; accessory flagellum of 2 articles, 1.1 main flagellum article 1 length, with 3 simple setae (Fig. 35C).

Antenna peduncle of 5 articles; article unarmed; article 2 with pappose seta; article 3 unarmed; article 4 and 5 with ranks of setae; flagellum extending to posterior border of pleonite 6, articles short (Fig. 35D).

Maxilliped 3 basis 1.4 as long as all other articles together, with 7 simple, 8 pappose and 2 plumose, distal corner not expanded; ischium 0.04 basis length, unarmed; merus 3.0 ischium length, with 2 pappose and 2 plumose setae; carpus 2.5 merus length, with 13 pappose setae; propodus 0.9 carpus length, with 7 pappose and 4 plumose setae; dactylus 0.4 propodus length, with 3 simple setae terminally; exopod 0.9 basis length, basal article with pappose seta, flagellum with plumo-annulate setae (Fig. 35E).

Pereopod 1 basis 1.2 all other articles together, margin serrate, margin with hyaline fringe, with 11 pappose setae; ischium 0.03 basis length, with pappose seta; merus 3.0 ischium length, with 2 pappose setae; carpus 3.0 merus length, with hyaline fringe, with 1 pappose and 6 simple setae; propodus 0.95 carpus length, with hyaline fringe, with 6 simple setae; dactylus 0.5 propodus length, with 4 simple setae terminally; exopod 0.9 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 35F).

Pereopod 2 basis longer than next 4 articles together, with hyaline fringe, 4 pappose setae; ischium 0.04 basis length, with microserrate seta with single subterminal setule; merus 3.3 ischium length, with pappose seta and microserrate seta with single subterminal setule; carpus 4.4 merus length, with 1 simple, 1 plumose and 9 microserrate setae with single subterminal setule; propodus 0.2 carpus length, unarmed; dactylus broken; exopod equal to basis length, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 36A).

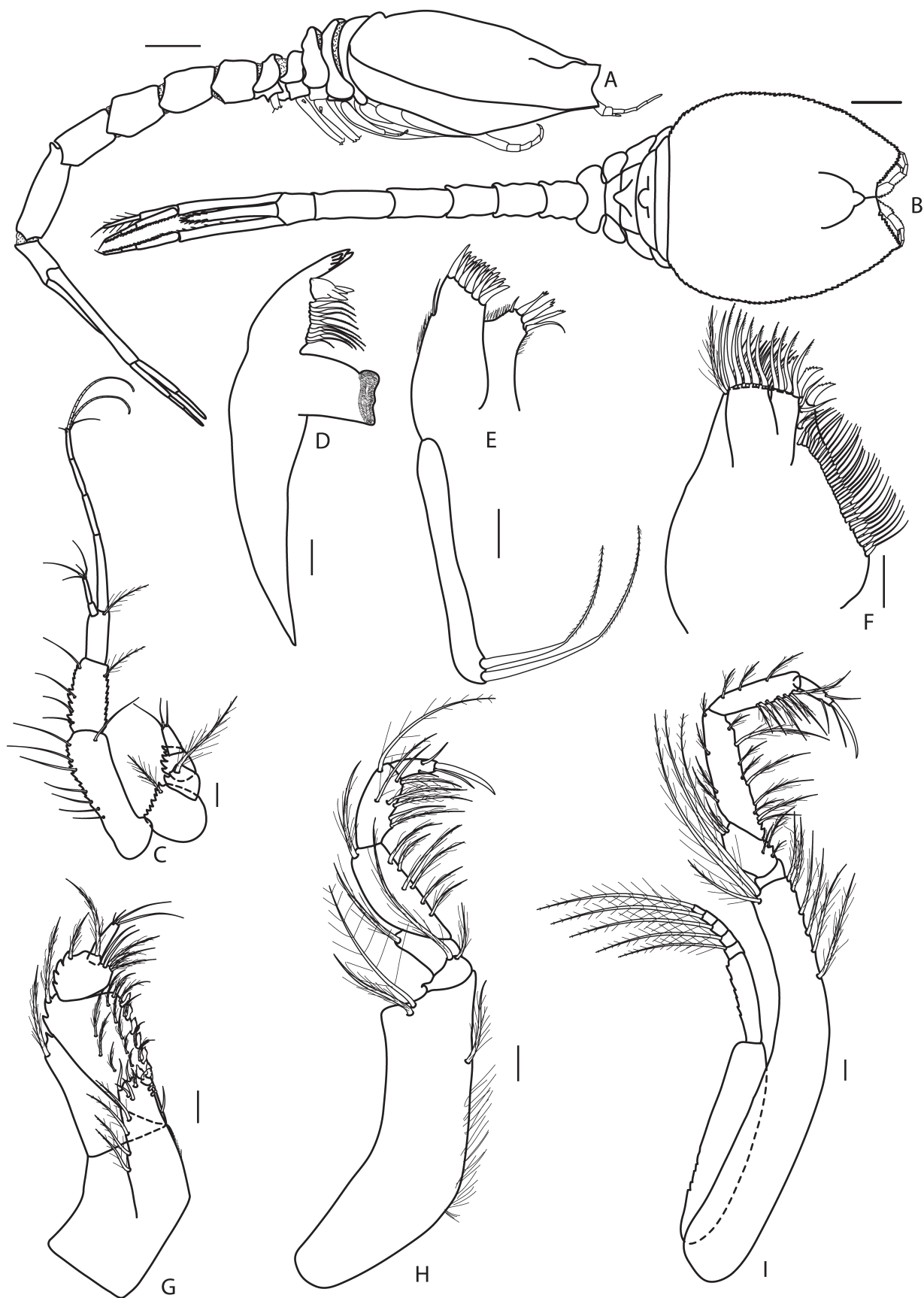


FIGURE 33. *Misceolamprops concavus* n. sp. Holotype subadult female NMV J62277, A, side view. Paratype subadult female, NMV J62278, B, dorsal view. Paratype subadult female NMV J62279, C, antennule and antenna; D, mandible; E, maxillule; F, maxilla; G, maxilliped 1; H, maxilliped 2; I, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.

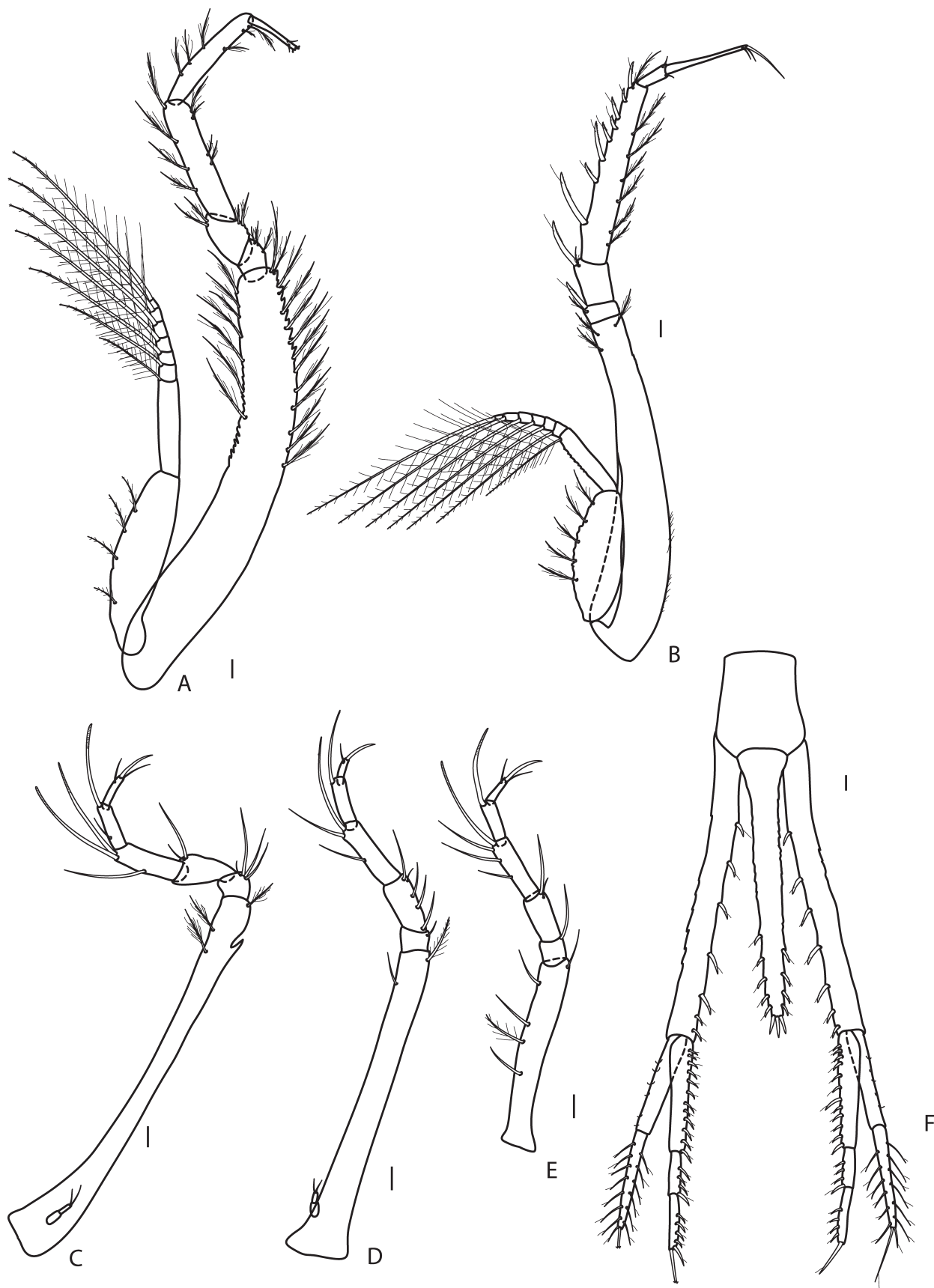


FIGURE 34. *Misceolamprops concavus* n. sp. Paratype subadult female NMV J62279, A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

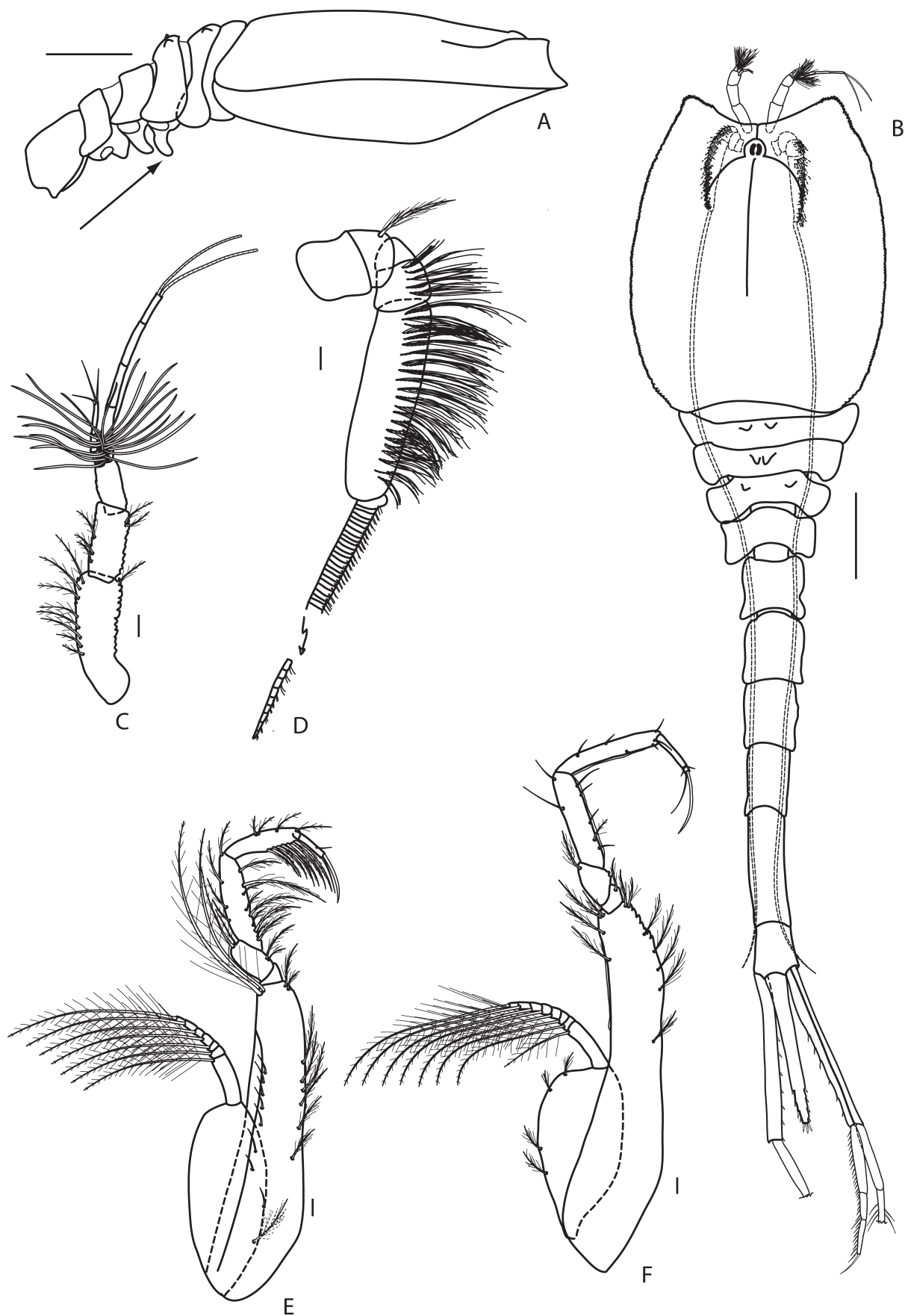


FIGURE 35. *Misceolamprops concavus* n. sp. Paratype adult male AM P101482, A, side view; B, dorsal view; C, antennule; D, antenna; E, maxilliped 3; F, pereopod 1. Scale bars full body 1.0 mm, all others 0.1 mm.

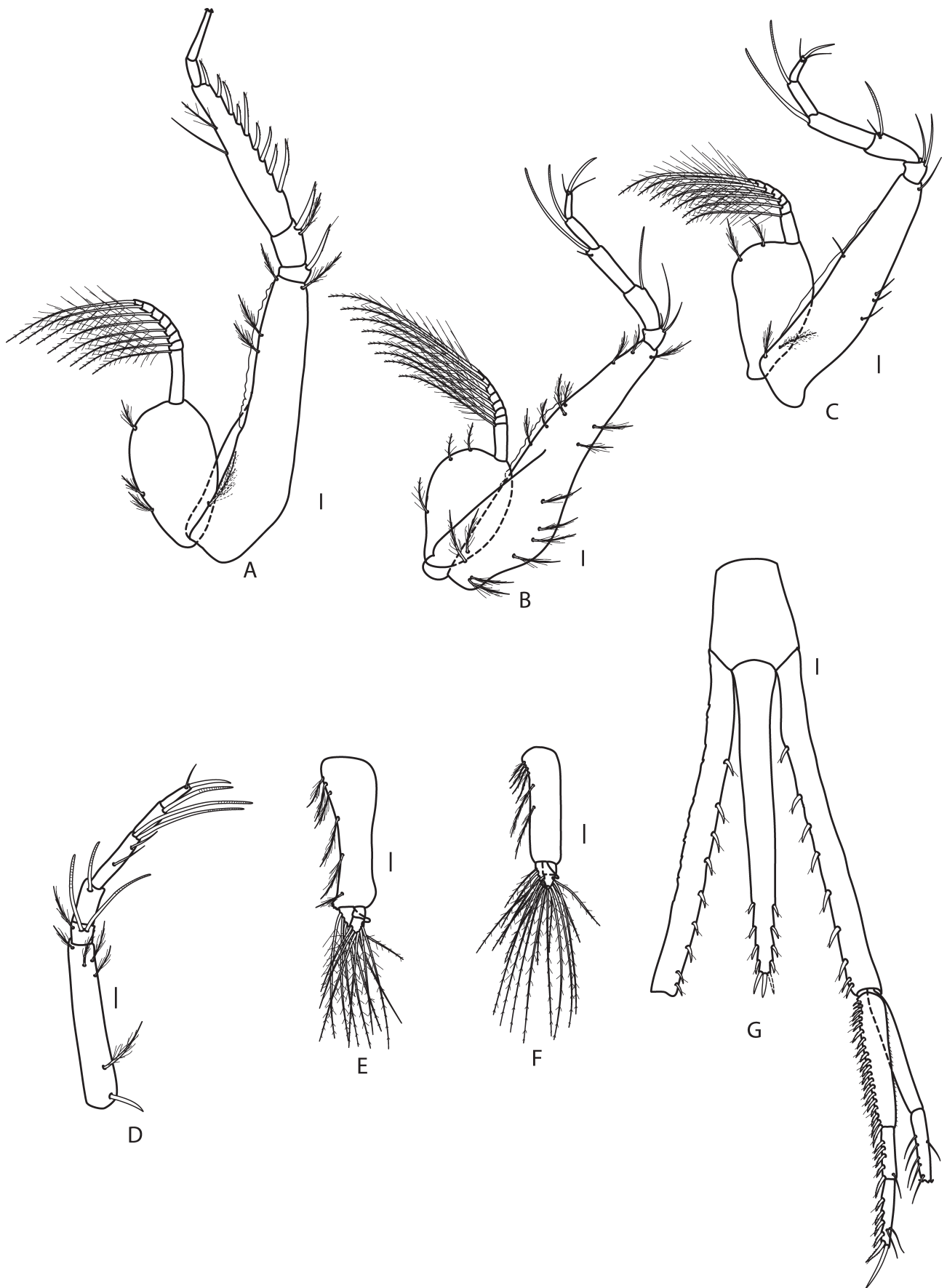


FIGURE 36. *Misceolamprops concavus* n. sp. Paratype adult male AM P101482, A, pereopod 2; B, pereopod 3; C, pereopod 4; D, pereopod 5; E, pleopod 1; F, pleopod 3; G, telson and uropods. Scale bars 0.1 mm.

Pereopod 3 basis 1.7 all other articles together, with hyaline fringe, 1 pappose setae; ischium 0.05 basis length, with 3 simple setae; merus 2.3 ischium length, with simple seta; carpus 1.3 merus length, with 1 simple and 1 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.7 propodus length, with 3 simple setae terminally; exopod 0.8 basis length, basal article with 3 plumose setae, flagellum with plumo-annulate setae (Fig. 36B).

Pereopod 4 basis 1.3 all other articles together, with hyaline fringe, 1 pappose and 5 simple setae; ischium 0.07 basis length, with 2 simple; merus 2.3 ischium length, with 1 simple and 1 annulate setae; carpus 1.5 merus length, with annulate seta; propodus 0.6 carpus length, with annulate seta; dactylus 0.7 propodus length, with 3 simple setae terminally; exopod 0.9 basis length, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 36C).

Pereopod 5 basis as long as next 4 articles together, with 1 simple and 5 pappose setae; ischium 0.1 basis length, with 1 pappose and 2 annulate setae; merus 1.75 ischium length, with annulate seta; carpus 1.7 merus length, with 2 simple and 2 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.9 propodus length, with 2 simple setae terminally (Fig. 36D).

Pleopod 1 biramous, basal article with 5 pappose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 36E).

Pleopod 2 broken, not illustrated

Pleopod 3 biramous, basal article with 5 pappose setae; medial ramus with projection, both rami with long plumoannulate setae (Fig. 36F).

Telson 3.2 length of pleonite 6, with 4 pairs lateral setae with single subterminal setule, 3 simple terminal setae, longer than lateral setae (Fig. 36G).

Uropod peduncles 3.4 pleonite 6 length, 1.1 telson length. Uropod endopod 0.8 peduncle length; article 1 with 21 microsetate setae with single subterminal setule medially; article 2 0.4 article 1 length, with 5 microsetate setae with single subterminal setule medially; article 3 1.3 article 2 length, with 5 microsetate setae with single subterminal setule medially, 2 simple setae laterally, simple terminal seta 0.7 article 3 length. Uropod exopod article 2 broken (Fig. 36G).

Etymology. The species is named *concaus* in reference to the concave anterior margin in the dorsal view.

Depth. 592–720 m.

Distribution. Victoria, New South Wales and Tasmania, Australia, 33–42°S, 148–152°E.

Remarks. The new species can be differentiated from *Misceolamprops dolorsae* by the carapace morphology and uropod peduncle. In the new species, the branchial regions of the carapace are not inflated, while in *M. dolorsae* the branchial regions are inflated. In the new species, the uropod peduncles have at least seven setae medially, while in *M. dolorsae* the uropod peduncles have no more than four setae medially.

***Misceolamprops dolorsae* Corbera, 2006**

Misceolamprops dolorsae Corbera, 2006: 150–154, figs 4–6.

Type material. Holotype: MNHN Cu998, preparatory female. Allotype: MNHN Cu999, subadult male. Paratypes: MNHN Cu1000, 37 preparatory females, 24 subadult males, 4 damaged; MNHN Cu1001, adult male, damaged; MNHN Cu1002, 5 preparatory females, damaged, 1 immature male; MNHN Cu1003, subadult male. New Caledonia, 22°47.3'S, 167°14.3'E.

Diagnosis. Carapace branchial regions inflated. Uropod peduncles with 3–4 setae medially. *Adult male* unknown.

Depth. 440–1070 m.

Distribution. New Caledonia, 22°43.7'S, 167°14.3'E.

Remarks. The two species in this genus are very similar, but can be differentiated by the carapace morphology and uropod peduncle setation. In *Misceolamprops dolorsae* the branchial regions are somewhat inflated, and the uropod peduncles have 3–4 setae medially, while in *M. concaus* n. sp. the branchial regions are not inflated, and the uropod peduncles have at least seven setae medially.

***Murilamprops* Reyss, 1978b**

Murilamprops Reyss, 1978b: 77.

Type species. *Murilamprops brasiliensis* Reyss, 1978b, by monotypy.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp unknown. Pereopod 1 slender. Pereopod 5 shorter than pereopod 4 basis, articles 2–6 reduced and subequal. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with short antenna, not extending to end of pereon, without penial lobes, with 1 pair of pleopods.

Species. *Murilamprops brasiliensis* Reyss, 1978b.

Remarks. This genus is unique in the male possessing a single pair of pleopods.

***Murilamprops brasiliensis* Reyss, 1978b**

Murilamprops Reyss, 1978b: 78–82, figs 4A–F, 5A–J.

Type material. Deposition unknown. Not seen.

Diagnosis. Marginal carina crenellate. *Female* similar to male. *Adult male* pleopod rami unequal, lateral ramus biarticulate and longer than medial ramus.

Depth. 587–1007 m.

Distribution. Tropical South Atlantic, 7–8°S, 34°W.

Remarks. The characters that define the genus serve to distinguish this species from all other Lampropidae.

***Paralamprops* Sars, 1887**

Paralamprops Sars, 1887: 26.

Type species. *Paralamprops serratocostatus* Sars, 1887, by monotypy.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp absent. Pereopod 1 slender. Pereopod 5 shorter than basis of pereopod 4. Telson at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with antenna extending past pereon, without penial lobes, with 3 pairs of pleopods.

Species. *Paralamprops caudodentatus* Corbera, 2006, *P. margidens* Day, 1978, *P. poorei* Gerken, 2009, *P. serratocostatus* Sars, 1887.

Remarks. Sars (1887) defined the genus *Paralamprops* by the combination of the flattened carapace and the lack of a maxillule palp, noting that the lack of the palp was extremely unusual. Some subsequent authors ignored this character, and added species to the genus with a flattened carapace that also possess a normal maxillule palp with 2 setae. There are some species in which the state of the palp is not known. A flattened carapace is a character shared with several other genera, and is almost certainly associated with the water content and grain size of the sediments on which the organisms live. Therefore, I am defining *Paralamprops* as without the maxillule palp, *sensu* Sars, and removing species that possess a maxillule palp, and those in which the state of the maxillule palp is unknown, to the genus *Platytyphlops*. Species in which the palp state is unknown are removed to *Platytyphlops*, because the basal state of the palp is to be present with 2 setae.

Key to the species *Paralamprops*

1. Carapace without ridges 2
- Carapace with ridges 3
2. Uropod peduncles with 10 or more medial setae *P. poorei*
- Uropod peduncles with 5 or fewer medial setae *P. margidens*
3. Carapace with several long ridges *P. serratocostatus*
- Carapace with 2 pairs of very short ridges *P. caudodentatus*

Paralamprops caudodentatus Corbera, 2006

Paralamprops caudodentatus Corbera, 2006: 154–156, fig. 7.

Type material. Holotype: MNHN-Cu1004, adult male. New Caledonia, 24°11.67'S, 167°31.37'E.

Diagnosis. Carapace with 2 pairs short lateral ridges, marginal carina entire. Telson 0.8 uropod peduncles, with 3 terminal setae. Uropod peduncles with 27 medial setae. *Adult male* unknown.

Depth. 1070 m.

Distribution. New Caledonia, 24°11.7'S, 167°31.37'E.

Remarks. Of the two species with ridges on the carapace in addition to the marginal carina, it is simple to differentiate between *Paralamprops caudodentatus* and *P. serratocostatus*. In *P. serratocostatus* the ridges are long and are all serrate or toothed, while in *P. caudodentatus* the ridges are very short and their margins are entire. Within *Platytyphlops*, there are no species with a similar carapace to *P. caudodentatus*.

Paralamprops margidens Day, 1978

Paralamprops margidens Day, 1978: 151–154, fig. 5A–P.

Type material. Holotype: SAMC A15721, male. Not seen.

Diagnosis. Carapace without lateral ridges, marginal carina toothed. Telson 0.8 uropod peduncles, with 3 terminal setae, central seta longest. Uropod peduncles with 3 medial setae. *Adult male* unknown.

Depth. 800 m.

Distribution. South Africa, 34°25'S, 17°45'E.

Remarks. The most similar species is *Paralamprops poorei*, which also has a strongly toothed marginal carina. However, in *P. poorei* there are no teeth on the dorsal crest, the telson has five pairs of lateral setae, and the uropod peduncle has 10–11 setae medially, while in *P. margidens* there is a toothed dorsal crest, the telson has four pairs of lateral setae, and the uropod peduncle has three setae medially.

The most similar species of *Platytyphlops* are species that also have a toothed or serrate marginal carina, *P. carpuserratus*, *P. corollifera*, *P. girardi* and *P. semiornatus*. However, in *P. carpuserratus*, *P. corollifera*, and *P. girardi*, the carapace is close to circular or square in the dorsal view, while in *Paralamprops margidens* the carapace is much longer than wide in the dorsal view. While *Paralamprops semiornatus* is also longer than wide in the dorsal view, it can be differentiated by the nearly equal in length telson terminal setae; in *P. margidens* the central terminal seta on the telson is much longer and stouter than the outer pair.

Paralamprops poorei Gerken, 2009

Paralamprops poorei Gerken, 2009: 71–74, figs 1–2.

Type material. Holotype: ovigerous female, NMV J59990. Paratypes: subadult female, NMV J59992; subadult female, NMV J59991; 5 subadult males, 2 subadult females, NMV J54394. South of Point Hicks, Victoria, Australia, 38°29'20"–38°26'49"S, 149°19'59"–149°20'47"E, 1759–1840 m, 26 October 1988.

Diagnosis. Carapace without lateral ridges, marginal carina toothed. Telson 0.9 uropod peduncles, with 3 terminal setae. Uropod peduncles with 10–11 medial setae. *Adult male* unknown.

Depth. 1759–1840 m.

Distribution. Southern Australia, 38°S, 149°E.

Remarks. The most similar species is *Paralamprops margidens*, which shares the strongly toothed marginal carina. However, in *P. poorei* there are no teeth on the dorsal crest, the telson has 5 pairs of lateral setae, and the uropod peduncle has 10–11 setae medially, while in *P. margidens* there is a toothed dorsal crest, the telson has 4 pairs of lateral setae, and the uropod peduncle has 3 setae medially.

The most similar species of *Platytyphlops* also have a toothed or serrate marginal carina, *P. carpuserratus*, *P. corollifera*, *P. girardi* and *P. semiornatus*. In *P. carpuserratus*, *P. corollifera* and *P. girardi*, the carapace is nearly circular or square from the dorsal view, while in *Paralamprops poorei* the carapace is distinctly longer than wide. While *P. semiornatus* is also longer than wide in the dorsal view, it can be differentiated by the serrate anterior medial crest on the carapace; in *Paralamprops margidens* the anterior medial crest on the carapace is entire.

***Paralamprops serratocostatus* Sars, 1887**

Paralamprops serratocostatus Sars, 1887: 26–32, pl. 2 figs 6–13, pl. 3.

Type material. Syntypes: MNHN Cu130, 7 specimens. Kerguelen Islands.

Diagnosis. Carapace with 3 pairs lateral ridges, marginal carina toothed. Telson 0.8 uropod peduncles, with 3 terminal setae. Uropod peduncles with 17 medial setae. *Adult male* unknown.

Depth. 230–3674 m.

Distribution. Kerguelen Islands; Weddell Sea, 49°S, 69°E.

Remarks. The species is unique in the genus in having long ridges on the carapace that are strongly serrate. The most similar species is *Farragolamprops seminalis*, which also has serrate ridges on the carapace. However, in *F. seminalis* the eyelobe has lenses, and the telson terminal setae are unequal, with the central seta short, while in *Paralamprops serratocostatus* the eyelobe has no visual elements, and the telson terminal setae are equal in length.

***Paraplatysympus* n. gen.**

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum as long as main flagellum. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 shorter than pereopod 4 basis. Telson as long as uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 probably short. *Female* with rudimentary exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with 3 pairs pleopods.

Etymology. *Para* meaning like, near or similar, and *platysympus*, in reference to the similarity of this genus to the genus *Platysympus*. Gender masculine.

Type species. *Paraplatysympus echinolowryi* n. sp.

Species. *Paraplatysympus aspericristatus* n. sp., *Paraplatysympus echinolowryi* n. sp.

Remarks. This genus resembles *Platysympus* in the rudimentary exopods on pereopod 2–4 in the female. However, *Platysympus* lacks the maxillule palp, and has pereopod 5 longer than the basis of pereopod 4, while the new genus has a maxillule palp with two setae and pereopod 5 shorter than pereopod 4 basis. This genus also resembles *Doieolamprops* in the rudimentary exopod on pereopod 2. However, *Doieolamprops* has two articles in the uropod endopod and a pair of pleopods in the female, while *Paraplatysympus* has three articles in the uropod endopod and no pleopods in the female.

Key to the species of *Paraplatysympus*

1. Telson shorter than uropod peduncles, rudimentary exopods in females well developed *P. echinolowryi*
- Telson equal to or longer than uropod peduncles, rudimentary exopods on pereopods 3 and 4 small. *P. aspericristatus*

***Paraplatysympus aspericristatus* n. sp.**
(Figs 37–38)

Type material. Holotype: subadult female, NIWA 45708, TAN0705/160, 42.78°S, 176.28°W, 1026 m, Chatham Rise, New Zealand, 16 April 2007.

Diagnosis. *Female* exopods on pereopods 3 and 4 minute. Telson 2.5 length of pleonite 6, equal in length to uropod peduncles, with 8 pairs lateral setae, with 3 equal terminal setae. *Adult male* unknown.

Description. Holotype subadult female, NIWA 45708.

Subadult female, 10.1 mm. Carapace dorsoventrally flattened, with 1 pair serrate dorsal ridges, 1 pair short posterior serrate ridges, ventral to dorsal ridge, 1 pair long anterior serrate ridges beginning on pseudorostral lobes and proceeding posteriorly, paired dorsolateral swellings, marginal carina serrate; pseudorostral lobes 0.4 carapace length; eyelobe 0.06 carapace length, no lenses; carapace 1.4 length of pereonites together (Fig. 37A, B).

Antennule peduncle article 1 longest, with 2 simple setae; article 2 0.5 article 1 length, margin serrate, with 7 simple and 3 pedunculate setae; article 3 0.7 article 2 length, with 4 simple and 3 pedunculate setae; main flagellum of 5 articles, with 7 simple, 2 pedunculate and 2 aesthetasc setae; accessory flagellum of 3 articles, 1.06 main flagellum length, with 9 simple and 2 pedunculate setae (Fig. 37C).

Antenna, mandible not illustrated.

Maxillule with 2 endites; outer endite with 12 stout setae; inner endite with 1 simple, 1 dentate and 3 microserrate setae; palp with 2 setae (Fig. 37D).

Maxilla with 3 endites; broad endite distal margin with simple and pappose setae, medial margin with row of 36 setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 5 microserrate setae terminally; both narrow endites extending past distal margin of broad endite (Fig. 37E).

Maxilliped 1 basis produced distally as broad lobe, distal margin with 6 simple setae, lateral margin with 2 hook setae, 11 pappose setae; ischium absent; merus distal margin serrate, with pappose seta; carpus 2.1 merus length, with 16 pappose and 8 comb setae; propodus 0.5 carpus length, with 5 pappose and 2 simple setae; dactylus 0.8 propodus length, with 3 simple setae (Fig. 37F).

Maxilliped 2 basis equal to all other articles together, margin serrate, with 3 plumose and 3 pappose setae; ischium 0.07 basis length, unarmed; merus 3.75 ischium length, margin serrate, with 1 plumose and 1 simple setae; carpus 1.3 merus length, with 1 plumose and 5 pappose setae; propodus 0.7 carpus length, with 5 plumose and 3 simple setae; dactylus 0.7 propodus length, with 5 simple setae (Fig. 38A).

Maxilliped 3 basis longer than next 4 articles together, with 12 pappose and 4 plumose setae, not expanded distally; ischium 0.05 basis length, unarmed; merus 2.3 ischium length, with 2 plumose and 2 pappose setae; carpus 3.1 merus length, with 13 plumose setae; propodus 0.6 carpus length, with 7 microserrate and 4 plumose setae; dactylus 0.5 propodus length, with 4 simple setae terminally; exopod longer than basis, basal article with 8 plumose setae, flagellum with plumo-annulate setae (Fig. 38B).

Pereopod 1 broken, not illustrated.

Pereopod 2 basis as long as next 4 articles together, margin serrate, with 1 large tooth proximally, with 3 plumose setae; ischium 0.06 basis length, with 2 plumose setae; merus 3.3 ischium length, with 3 plumose setae and 1 microserrate seta with single subterminal setule; carpus 2.6 merus length, with 1 plumose and 6 microserrate setae with single subterminal setule; propodus 0.2 carpus length, with 3 simple setae; dactylus 0.3 propodus length, with 12 simple setae; exopod rudimentary, of 2 articles, basal article with 3 plumose and 2 simple setae, terminal article with 4 simple setae (Fig. 38C).

Pereopod 3 basis 1.8 all other articles together, margin serrate, with 5 simple and 1 plumose setae; ischium 0.04 basis length, with 2 simple setae; merus 5.0 ischium length, with simple seta; carpus 0.7 merus length, with 1 simple and 2 annulate setae; propodus 0.6 carpus length, with 1 simple and 1 annulate setae; dactylus 1.0 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.09 basis length, of 2 articles with 4 simple setae (Fig. 38D).

Pereopod 4 basis 2.5 all other articles together, margin with few large teeth, with 4 plumose and 8 simple setae; ischium 0.05 basis length, with 2 simple setae; merus 3.0 ischium length, with simple seta; carpus 0.7 merus length, with 2 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.3 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles with 4 simple setae (Fig. 38E).

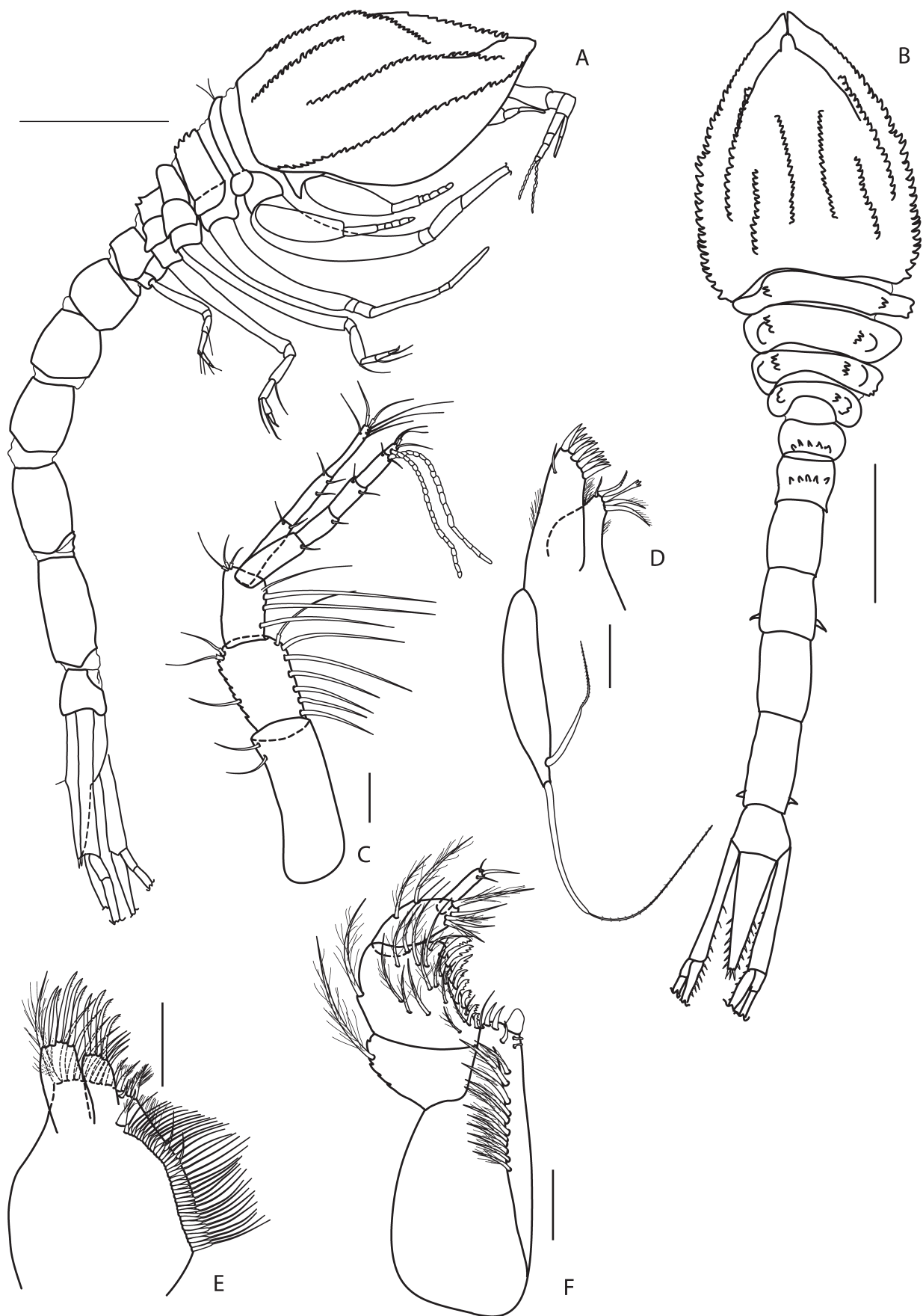


FIGURE 37. *Paraplatysympus aspericristatus* n. sp. Holotype subadult female NIWA 45708, A, side view; B, dorsal view; C, antennule; D, maxillule; E, maxilla; F, maxilliped 1. Scale bars full body 1.0 mm, all others 0.1 mm.

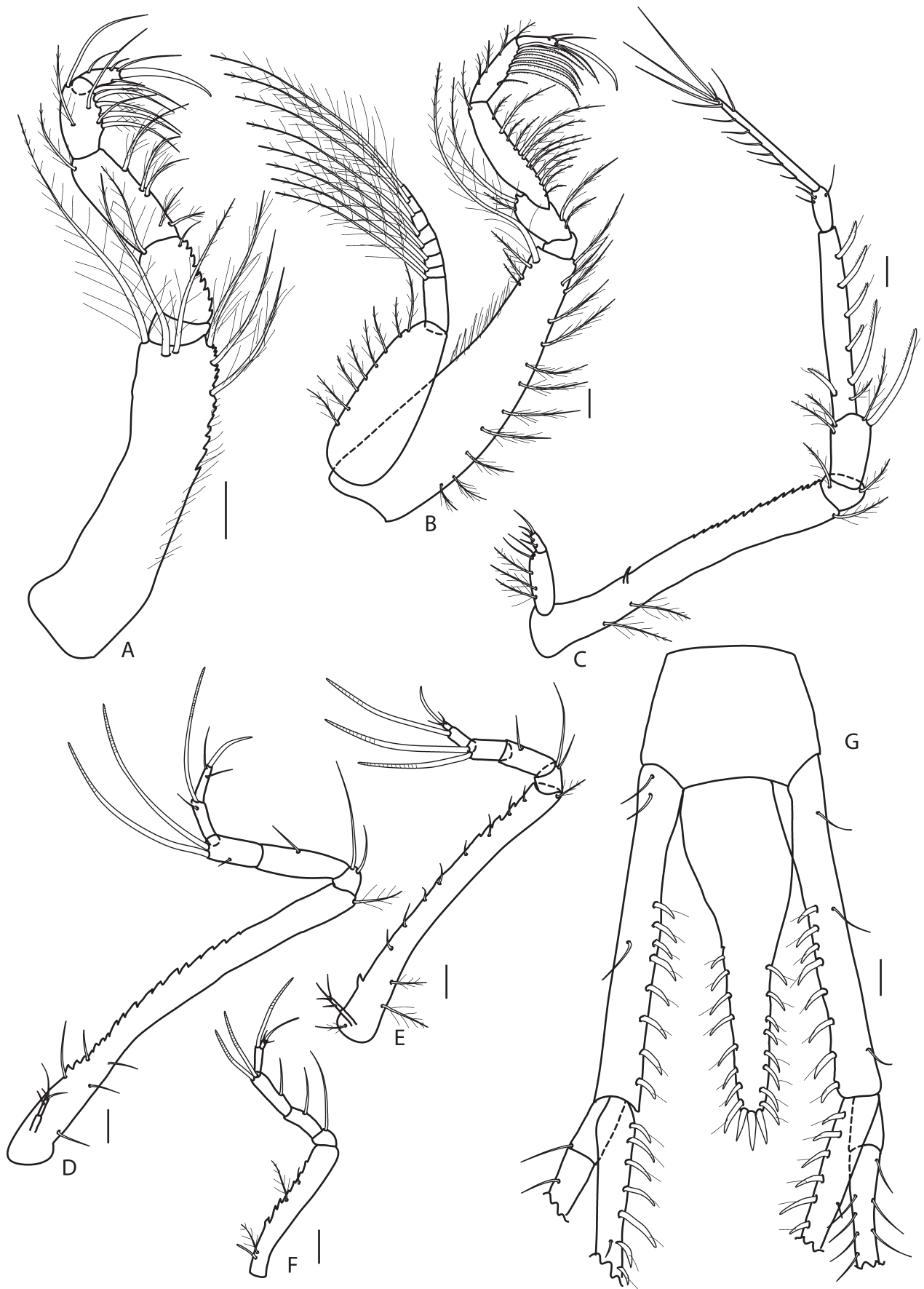


FIGURE 38. *Paraplatysympus aspericristatus* n. sp. Holotype subadult female NIWA 45708 A, maxilliped 2; B, maxilliped 3; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.

Pereopod 5 basis 1.2 all other articles together, margin serrate, with 1 simple, 1 pedunculate and 2 plumose setae; ischium 0.07 basis length, with simple seta; merus 3.0 ischium length, with simple seta; carpus 1.7 merus length, with 1 simple and 2 annulate setae; propodus 0.4 carpus length, with annulate seta; dactylus 0.3 propodus length, with 3 simple setae terminally (Fig. 38F).

Telson 2.6 length of pleonite 6, with 8 pairs lateral setae with single subterminal setule, 3 simple terminal setae, as long as lateral setae (Fig. 38G).

Uropod peduncles 2.6 length of pleonite 6, 1.0 length of telson, with 7–8 setae with single subterminal setule medially, 3 simple setae laterally. Uropod rami broken, uropod exopod article 1 clearly short (Fig. 38G).

Etymology. The species is named *aspericristatus* from the Latin *aspera* meaning rough, and *cristata* for ridges, in reference to the rough appearance of the ridges on the carapace.

Depth. 1023–1026 m.

Distribution. Chatham Rise, New Zealand

Remarks. The two species in the genus have similar carapace morphology, with dentate ridges. However, *Paraplatysympus aspericristatus* can be differentiated from *P. echinolowryi* by the minute rudimentary exopods on pereopods 3 and 4 in the female and the telson being equal to the uropod peduncles with eight pairs of lateral setae. In comparison, in *P. echinolowryi*, the rudimentary exopods on pereopods 3 and 4 in the female are non-natatory but relatively well developed, and the telson is shorter than the uropod peduncles with six pairs of lateral setae. In addition, *P. aspericristatus* is known from the waters of New Zealand, while *P. echinolowryi* is known from the southern coast of Australia.

***Paraplatysympus echinolowryi* n. sp.**

(Figs 39–41)

Type material. Holotype: ovigerous female, NMV J62280, 38°26'49"–38°29'20"S, 149°19'59"–149°20'47"E, 1750–1840 m. Paratypes: ovigerous female, dissected, NMV J62281, collected with holotype; adult male, dissected, NMV J62282, 34°55'47"–34°56'4"S, 151°7'52"–151°8'4"E, 429–466 m.

Diagnosis. *Female* exopods on pereopods 3 and 4 rudimentary, but not minute. Telson 3.3 length of pleonite 6, shorter than uropod peduncles, with 9 pairs lateral setae, with 3 equal terminal setae. *Adult male* carapace with same pattern of ridges, but less dentate than in female. Telson 2.9 length of pleonite 6, shorter than uropod peduncles, with 3 pairs lateral setae, with 3 terminal setae, central seta longest.

Description. Holotype ovigerous female, NMV J62280.

Ovigerous female, 6.5 mm. Carapace dorsoventrally flattened, posterior dorsolateral expansion, dorsally serrate ridge on posterior 0.7 of carapace, short serrate posterior ridge ventral to dorsal ridge, serrate ridge starting at anterior margin, proceeding to posterior margin, marginal carina serrate, anterior dorsal crest with teeth; pseudorostral lobes 0.3 carapace length, with row of spines dorsally, parallel to suture; eyelobe 0.05 carapace length, no lenses; carapace 2.0 length of pereonites together (Fig. 39A, B).

Paratype ovigerous female, NMV J62281

Ovigerous female, 6.0 mm.

Antennule peduncle article 1 1.2 articles 2 and 3 together, unarmed; article 2 0.4 article 1 length, with 7 plumose and 2 simple setae; article 3 equal to article 2, with 6 plumose and 2 simple setae; main flagellum of 5 articles, 1.1 article 1 length, with simple setae and 2 aesthetascs terminally; accessory flagellum of 4 articles, 1.1 main flagellum length, with simple setae (Fig. 39C).

Antenna of 4 articles; articles 1 and 2 unarmed; article 3 with 1 pappose seta; article 4 1.2 article 3 length, with 1 seta with single subterminal setule terminally (Fig. 39D).

Mandible navicular, with row of 13–14 microsetate setae medially, *lacinia mobilis* with 3 cusps (Fig. 39E).

Maxillule with 2 endites; outer endite with 12 simple setae; inner endite with 2 simple, 1 pappose and 2 dentate setae; palp with 2 setae (Fig. 39F).

Maxilla with 3 endites; broad endite distal margin with simple and pappose setae; medial narrow endite with 4 microsetate setae terminally; distal narrow endite with 4 microsetate setae terminally; both narrow endites extend past distal margin of broad endite (Fig. 39G).

Maxilliped 1 basis produced distally as broad lobe, broad lobe margin with row of pappose setae, distal margin

with simple and dentate setae; ischium absent; merus with 1 pappose seta laterally; carpus 1.9 merus length, medial face with simple and comb setae, 1 pappose seta laterally; propodus 0.6 carpus length, with pappose and simple setae; dactylus 0.5 propodus length, with 3 simple setae terminally (Fig. 39H).

Maxilliped 2 basis with 5 setae distally; ischium with 1 pappose seta; merus 6.5 ischium length, with pappose setae; carpus 1.5 merus length, with pappose setae; propodus 0.6 carpus length, with pappose setae; dactylus 0.6 propodus length, with simple seta terminally (Fig. 39I).

Maxilliped 3 basis longer than all other articles together, with pappose setae distally not expanded; ischium 0.8 basis length, unarmed; merus 1.2 ischium length, with 1 pappose seta medially, 2 pappose setae laterally, 1 tooth laterally; carpus 3.3 merus length, with 10 plumose setae medially, 1 pappose seta laterally; propodus 0.6 carpus length, with simple and plumose setae medially, 4 plumose setae laterally; dactylus 0.6 propodus length, with 4 simple setae terminally; exopod longer than basis, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 40A).

Pereopod 1 basis longer than next 4 articles together, medial margin serrate, with plumose setae marginally; ischium 0.04 basis length, with unarmed; merus 5.5 ischium length, with 3 plumose setae; carpus 0.6 merus length, with 1 simple and 2 plumose setae; propodus 0.9 carpus length, with 2 simple setae; dactylus broken; exopod longer than basis, basal article with 7 plumose setae, flagellum with plumo-annulate setae (Fig. 40B).

Pereopod 2 basis as long as next 4 articles together, with 2 simple and 2 plumose setae; ischium 0.04 basis length, unarmed; merus 5.0 ischium length, with 2 simple setae and 1 microserrate seta with single subterminal setule; carpus 3.3 merus length, with 1 simple and 9 microserrate setae with single subterminal setule; propodus 0.2 carpus length, with 2 simple setae; dactylus 2.9 propodus length, with 7 simple setae and 1 simple seta terminally; exopod rudimentary, 0.4 basis length, of 2 articles, with plumose and simple setae (Fig. 40C).

Pereopod 3 basis 2.2 all other articles together, with 1 simple and 6 plumose setae; ischium 0.05 basis length, with 1 simple seta; merus 3.7 ischium length, unarmed; carpus 0.6 merus length, with 2 simple and 2 annulate setae; propodus 0.7 carpus length, with 1 annulate seta; dactylus 0.8 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.2 basis length, of 2 articles with simple and plumose setae (Fig. 40D).

Pereopod 4 basis 1.8 all other articles together, with 6 plumose setae; ischium 0.06 basis length, with 1 plumose seta; merus 3.0 ischium length, with 1 simple seta; carpus 0.8 merus length, with 2 annulate setae; propodus 0.7 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.25 basis length, of 2 articles with simple setae (Fig. 40E).

Pereopod 5 basis 1.2 all other articles together, with 5 simple setae; ischium 0.9 basis length, with 1 simple seta; merus 2.5 ischium length, with 1 simple seta; carpus 1.6 merus length, with 1 simple and 2 annulate setae; propodus 0.4 carpus length, with 1 annulate seta; dactylus 0.7 propodus length, with 2 simple setae terminally (Fig. 40F).

Telson 3.3 length of pleonite 6, with 6 lateral setae with single subterminal setule, 3 simple terminal setae, longer than lateral setae (Fig. 40G).

Uropod peduncles 3.6 pleonite 6 length, 1.1 telson length, with 10 setae with single subterminal setule medially. Uropod endopod of 3 articles, equal to peduncle length; article 1 1.5 articles 2 and 3 together, with 10 setae with single subterminal setule medially; article 2 0.3 article 1 length, with 3 setae with single subterminal setule medially, 2 pedunculate setae laterally; article 3 equal to article 2, with 2 with single subterminal setule medially, 1–2 simple setae laterally, simple terminal seta 1.5 article 3 length. Uropod exopod 0.8 length of endopod; article 1 0.2 length of article 2, with 1–2 simple setae laterally; article 2 with 8–10 simple setae medially, 9–14 simple setae laterally, simple terminal seta 0.6 article 2 length (Fig. 40G).

Adult male, NMV J62282, broken.

Pereopod 2 basis longer than next 4 articles together, with 4 simple, 1 plumose and 3 pappose setae; ischium 0.07 basis length, with 1 simple and 2 plumose setae; merus 2.0 ischium length, with 1 simple, 2 plumose and 1 microserrate setae with single subterminal setule; carpus 3.1 merus length, with 8 microserrate setae with single subterminal setule; propodus 0.2 carpus length, with 2 microserrate setae with single subterminal setule; dactylus broken, with microserrate setae with single subterminal setule; exopod shorter than basis, basal article with 2 pappose setae, flagellum with plumo-annulate setae (Fig. 41A).

Pereopod 3 basis 2.0 all other articles together, with 4 simple setae; ischium 0.05 basis length, with 1 simple seta; merus 4.0 ischium length, with 1 simple seta; carpus 0.75 merus length, with 2 annulate setae; propodus 0.6 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 1 simple seta terminally; exopod shorter than basis, flagellum with plumo-annulate setae (Fig. 41B).

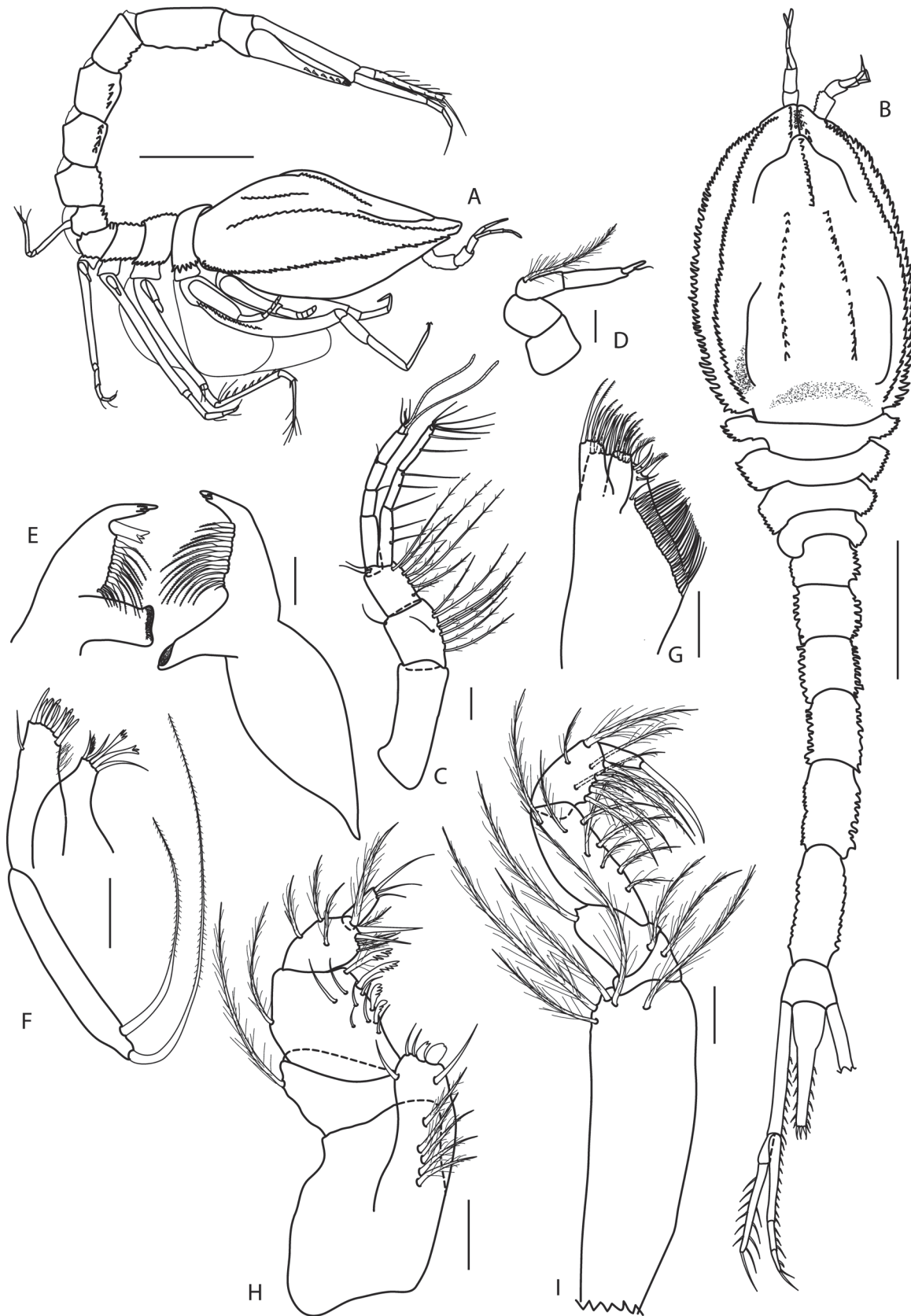


FIGURE 39. *Paraplatysympus echinolowryi* n. sp. Holotype ovigerous female NMV J62280 A, side view; B, dorsal view. Paratype ovigerous female NMV J62281, C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

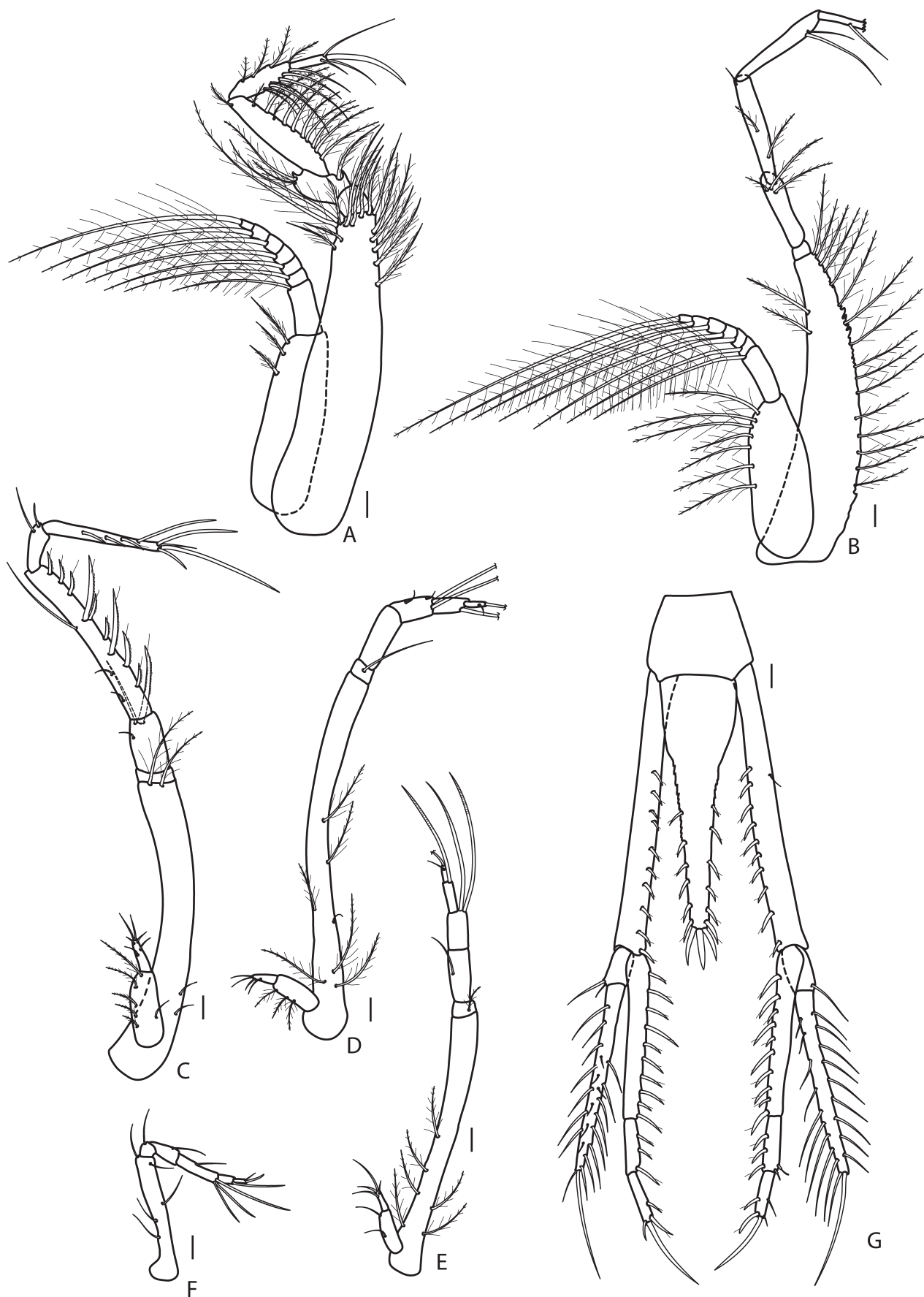


FIGURE 40. *Paraplatysympus echinolowryi* n. sp. Paratype ovigerous female NMV J62281, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.

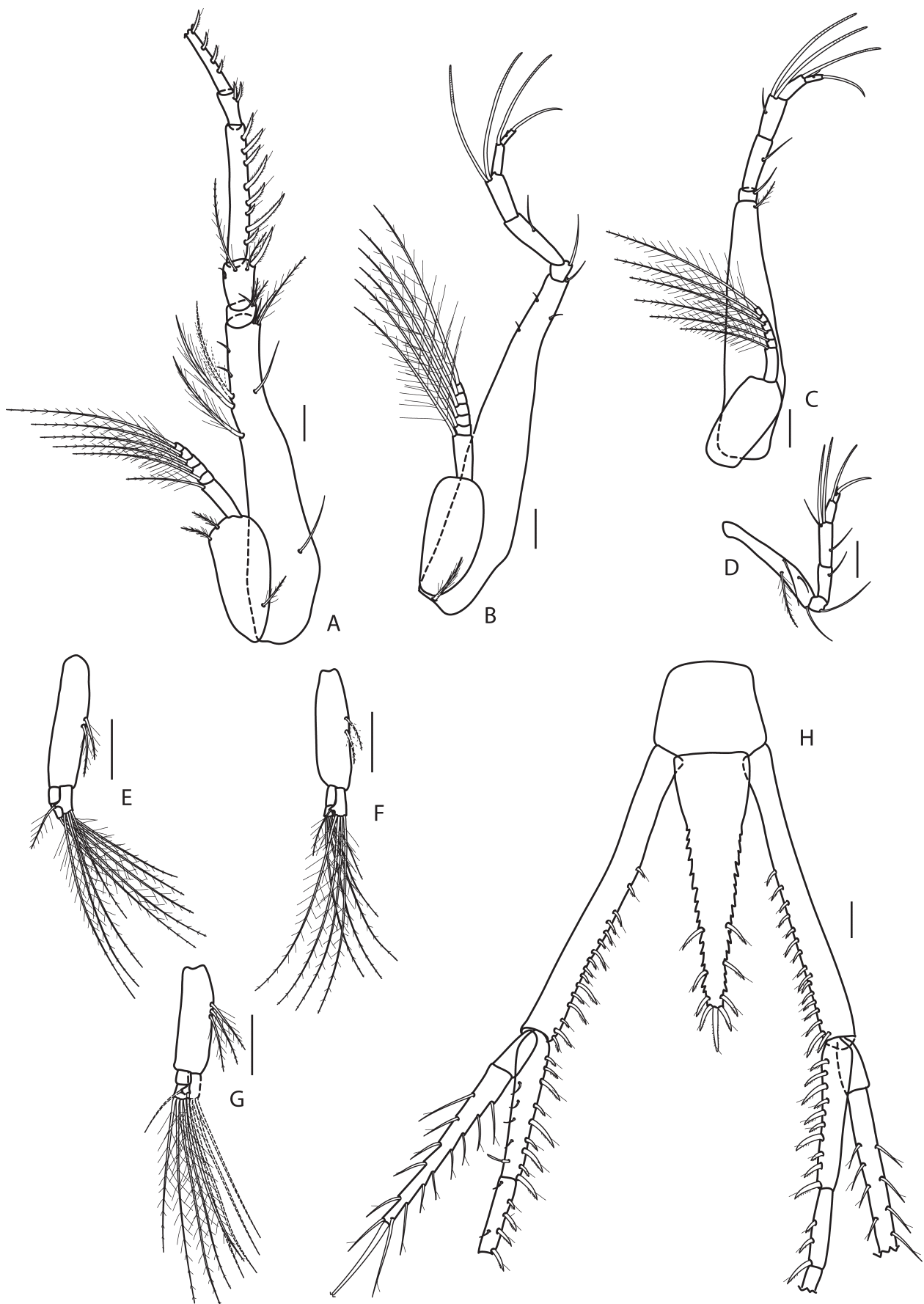


FIGURE 41. *Paraplatysympus echinolowryi* n. sp. Paratype adult male NMV J62282, A, pereopod 2; B, pereopod 3; C, pereopod 4; D, pereopod 5; E, pleopod 1; F, pleopod 2; G, pleopod 3; H, telson and uropods. Scale bars 0.1 mm.

Pereopod 4 basis 1.8 all other articles together, with 1 plumose seta; ischium 0.04 basis length, with 1 simple seta; merus 4.5 ischium length, with 1 simple seta; carpus 0.8 merus length, with 1 simple and 2 annulate setae; propodus 0.7 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod shorter than basis, flagellum with plumo-annulate setae (Fig. 41C).

Pereopod 5 basis as long as all other articles together, with 3 simple and 1 plumose setae; ischium 0.2 basis length, with 1 simple seta; merus 2.5 ischium length, with 1 simple seta; carpus 1.6 merus length, with 2 simple and 2 annulate setae; propodus 0.4 carpus length, with 1 annulate seta; dactylus 0.7 propodus length, with 1 simple seta terminally (Fig. 41D).

Pleopod 1 biramous, basal article with 2 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 41E).

Pleopod 2 biramous, basal article with 2 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 41F).

Pleopod 3 biramous, basal article with 3 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 41G).

Telson 2.8 length of pleonite 6, with 3 micro serrate setae with single subterminal setule laterally, 3 micro serrate setae with single subterminal setule terminally, central seta 2.0 length of other 2 setae (Fig. 41H).

Uropod peduncles 3.5 pleonite 6 length, 1.2 telson length, with 16 micro serrate setae with single subterminal setule medially. Uropod endopod of 3 articles, broken; article 1 with 9–10 micro serrate setae with single subterminal setule medially, 1 pedunculate and 4 simple setae laterally; article 2 0.5 article 1 length, with 3 micro serrate setae with single subterminal setule medially, 2 simple setae laterally; article 3 broken. Uropod exopod article 1 0.3 length of article 2; article 2 with 8 setae with single subterminal setule medially, 6 setae with single subterminal setule laterally, terminal seta broken (Fig. 41H).

Etymology. The species is named *echinolowryi*, because the pattern of carapace ridges is very similar to *Platytyphlops lowryi*, but the ridges in the new species are spiny rather than entire.

Depth. 429–1840 m.

Distribution. Southeastern Australia, 34–38°S, 149–151°E.

Remarks. While the adult male specimen is incomplete, it is clear that sexual dimorphism is present, with a pattern of ridges identical to the female but less dentate. *Paraplatysympus echinolowryi* can easily be distinguished from *P. aspericristatus* by the rudimentary exopods on pereopods 3 and 4 in the female being relatively well developed, vs. minute in *P. aspericristatus*. In addition, in *P. echinolowryi* the telson is shorter than the uropod peduncles, while in *P. aspericristatus* the telson is equal to the length of the uropod peduncles.

***Phallolamprops* n. gen.**

Type species. *Phallolamprops pribilofensis* n. sp.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella short, accessory flagellum 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with long antenna, extending to end of pleon, with penial lobes, without pleopods, with ventral elaboration of pleonites 1–2.

Species. *Phallolamprops californiensis* n. sp., *Phallolamprops pribilofensis* n. sp.

Etymology. The genus name is *Phallolamprops* from the combination of the similar genus *Lamprops* and *phallus*, in reference to the penial lobes. Gender masculine.

Remarks. This genus is quite similar to *Phallolampropoides*, but can be differentiated by the long antenna and the ventral elaboration on pleonites 1–2 in the adult male. If only females are present, the genus can be differentiated from *Hemilamprops* by pereopod 1, and from *Lamprops* by article 1 of the uropod exopod. In *Hemilamprops*, pereopod 1 has the basis shorter than the rest of the articles together, while in the new genus pereopod 1 has the basis longer than all other articles together. In *Lamprops*, article 1 of the uropod exopod is usually less than 0.5 the length of article 2, while in the new genus, article 1 of the uropod exopod is much greater

than 0.5 the length of article 2. Unfortunately, without adult males, there is no way to differentiate between the *Phallolamprops* and *Phallolampropoides*, except by differentiating among the different species.

Key to the species of *Phallolamprops*

1. Telson terminal setae, central seta and outer pair long, inner pair short *P. californiensis*
- Telson terminal setae, central seta longest, inner and outer pairs about same length *P. pribilofensis*

Phallolamprops californiensis n. sp.

(Figs 42–45)

Type material. Holotype: adult female LACM CR 10844; paratype ovigerous female, dissected, LACM CR 10845; paratype ovigerous female LACM CR 10846; paratype adult male, dissected, LACM CR 10847, paratype adult male, LACM CR 10848, Coronados middle (probably Middle Island, Coronado Islands), Baja California, 15.2–18.2 m, 13 August 1958.

Other material. 1 ovigerous female, 1 adult male, 6 juveniles, LACM CR 10850, Coronados middle, Baja California, 15.2–18.2 m, 13 August 1958. 1 adult male, LACM CR 10849, White's pond, 3.0 m. 1 adult male, LACM 75-209.5.

Diagnosis. Carapace without lateral ridges. Telson with 5 terminal setae, central seta longest, outer pair longer than inner pair. *Adult male* antennal flagellum extending to posterior border of pleonite 5.

Description. Holotype ovigerous female, LACM CR 10844; paratype ovigerous female, LACM CR 10846.

Ovigerous female, 4.7 mm. Carapace unornamented; pseudorostral lobes 0.4 carapace length; eyelobe 0.1 carapace length; carapace shorter than pereonites (Fig. 42A, B).

Paratype ovigerous female, LACM CR 10845.

Antennule peduncle article 1 equal to articles 2 and 3 together, unarmed; article 2 0.5 article 1 length, with 1 simple and 2 pedunculate setae; article 3 0.8 article 2 length, with 2 pedunculate setae; main flagellum of 2 articles, equal to article 3 length, with simple seta and 2 aesthetascs; accessory flagellum of 3 articles, 0.7 main flagellum length, with 2 simple setae (Fig. 42C).

Antenna of 3 articles, article 1 with 2 pappose setae, articles 2 and 3 unarmed (Fig. 42D).

Mandible navicular, with 7–9 microsetate setae medially, *lacinia mobilis* with 4 cusps, molar broader than medial setal row (Fig. 42E).

Maxillule with 2 endites; outer endite with 7 microsetate setae; inner endite with 2 simple and 2 pappose setae; palp with 2 setae (Fig. 42F).

Maxilla with 3 endites; broad endite distal margin with pappose and simple setae, medial margin with row of 27 setae; medial narrow endite with 4 microsetate setae terminally; distal narrow endite with 4 microsetate setae terminally; both narrow endites extending past distal margin of broad endite (Fig. 42G).

Maxilliped 1 basis produced medially as broad lobe, with 5 simple and 1 stout microsetate setae distally, lateral margin of lobe with 6 pappose and 1 simple setae, medial margin with pair of hook setae; ischium absent; merus unarmed; carpus 2.6 merus length, medial face with field of simple, pappose and comb setae, plumose seta laterally; propodus 0.5 carpus length, with 5 pappose setae; dactylus 0.6 propodus length, with 2 simple setae terminally (Fig. 42H).

Maxilliped 2 basis 1.1 all other articles together, with 1 simple and 3 plumose setae; ischium 0.1 basis length, 0.4 basis width (narrow), unarmed; merus 3.0 ischium length, with plumose seta; carpus equal to merus length, with 6 simple setae medially, plumose seta laterally; propodus 0.8 carpus length, with 6 simple setae medially, 2 plumose setae laterally; dactylus 0.3 propodus length, with 3 simple setae terminally (Fig. 42I).

Maxilliped 3 basis 1.6 all other articles together, with 11 pappose setae medially, 2 plumose setae laterally; ischium 0.04 basis length, with pappose seta; merus 4.5 ischium length, with 3 pappose setae medially, plumose seta laterally; carpus 1.3 merus length, with 6 simple setae medially, 2 simple setae laterally; propodus 0.8 carpus length, medial margin produced as large tooth, with 4 simple setae; dactylus 0.3 propodus length, with 4 simple setae terminally; exopod 0.9 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 43A).

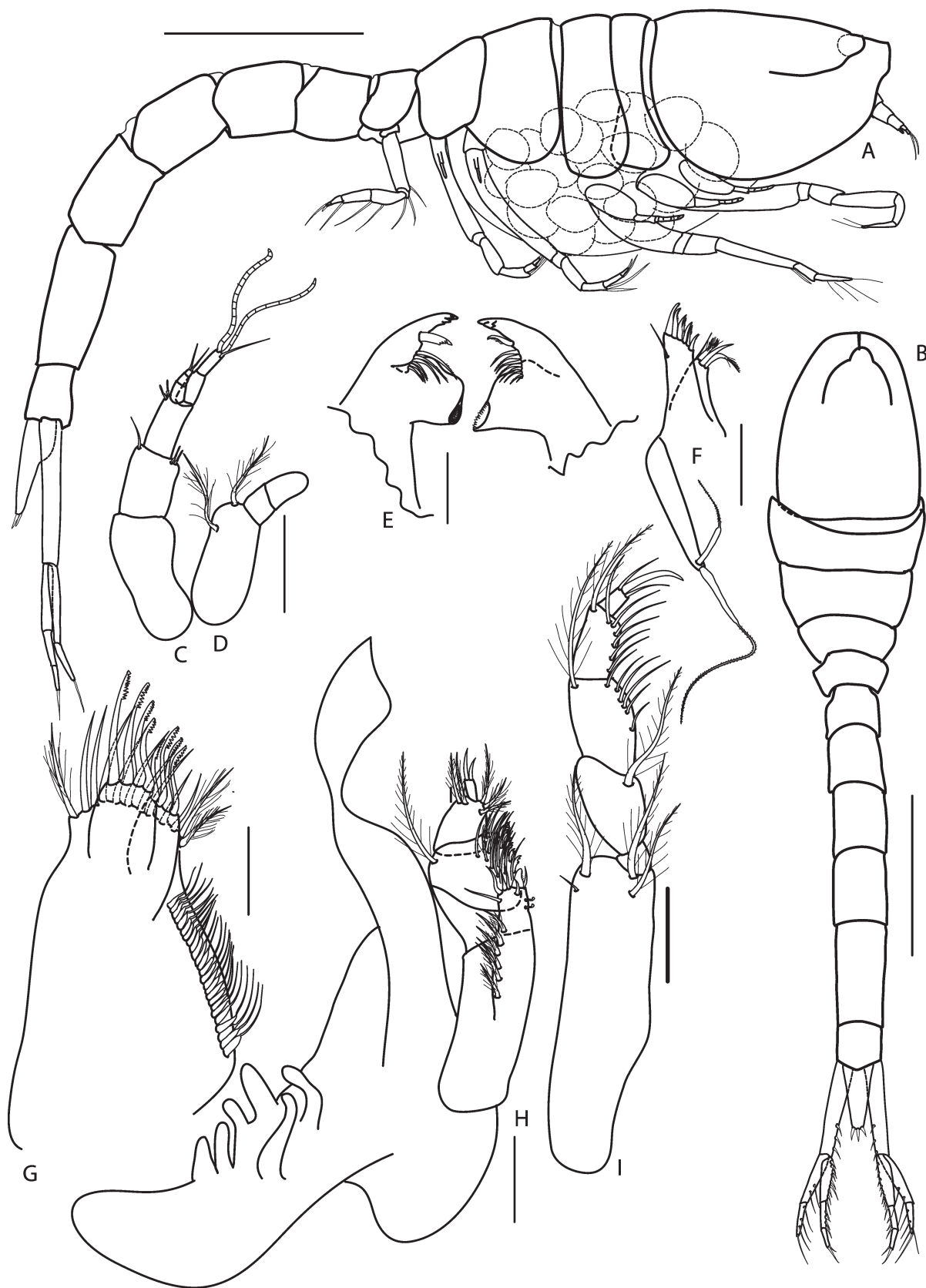


FIGURE 42. *Phallolamprops californiensis* n. sp. Holotype ovigerous female LACM CR 10844, A, side view; B, dorsal view. Paratype ovigerous female LACM CR 10845, C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

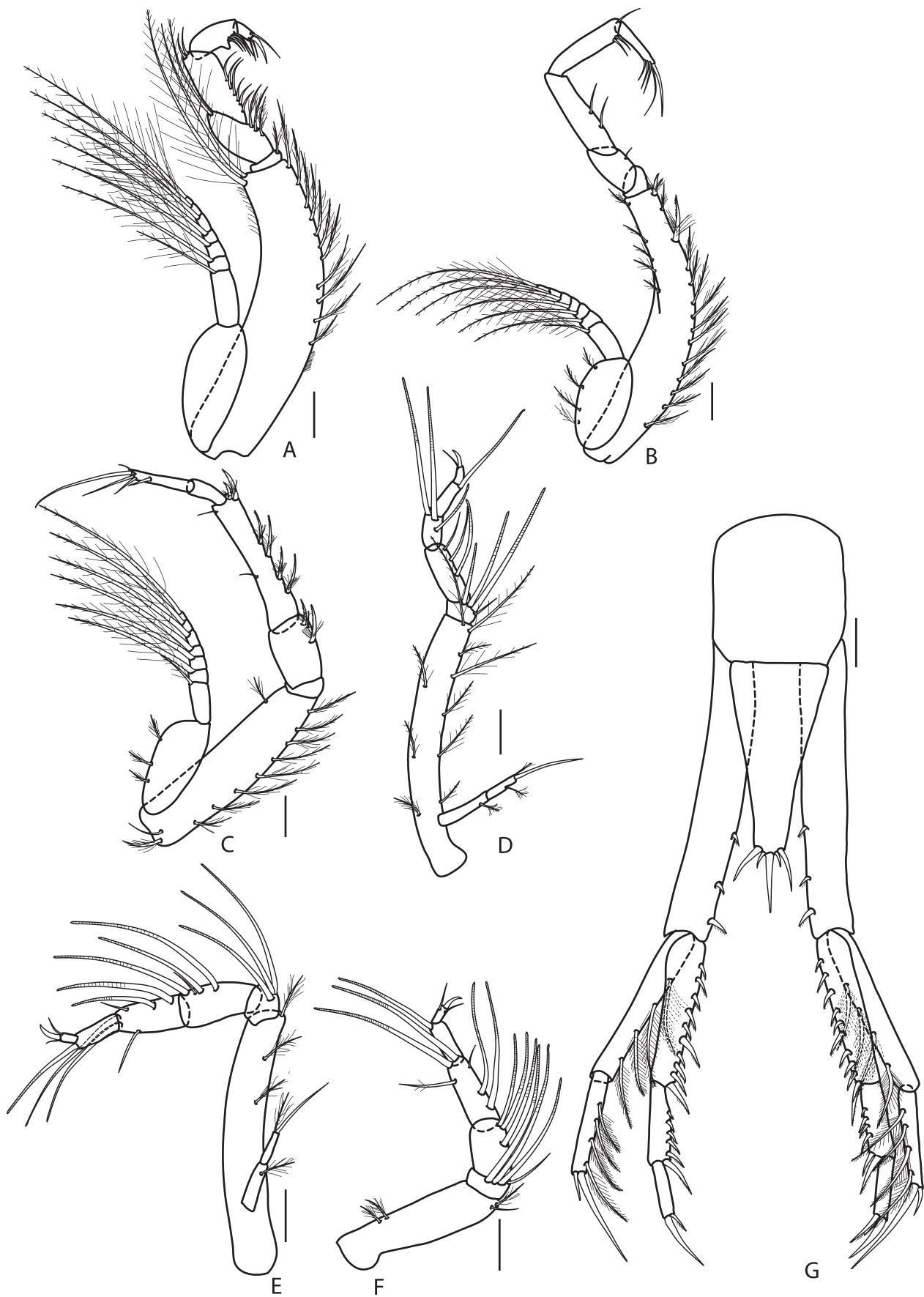


FIGURE 43. *Phallolamprops californiensis* n. sp. Paratype ovigerous female LACM CR 10845, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.



FIGURE 44. *Phallolamprops californiensis* n. sp. Paratype adult male LACM CR 10847, A, side view; B, dorsal view; C, ventral view of pereonite 5, pleonites 1 and 2; D, antennule; E, antenna; F, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.



FIGURE 45. *Phallolamprops californiensis* n. sp. Paratype adult male LACM CR 10847, A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

Pereopod 1 basis 1.0 all other articles together, with 12 pappose and 2 pappose–microserrate setae medially, 5 pappose setae laterally; ischium 0.04 basis length, unarmed; merus 3.5 ischium length, with simple seta; carpus 2.3 merus length, with 2 simple setae; propodus 0.9 carpus length, with 3 simple setae; dactylus 0.6 propodus length, with 5 simple setae terminally; exopod 0.7 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 43B).

Pereopod 2 basis 0.8 all other articles together, with 1 simple and 8 pappose setae; ischium 0.07 basis length, unarmed; merus 4.0 ischium length, with 2 pappose-microserrate setae; carpus 2.1 merus length, with 2 simple and 6 pappose-microserrate setae; propodus 0.3 carpus length, unarmed; dactylus 1.6 propodus length, with 5 simple setae terminally; exopod 0.8 basis length, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 43C).

Pereopod 3 basis 1.8 all other articles together, with 1 pappose and 9 plumose setae; ischium 0.09 basis length, with 1 simple and 3 annulate setae; merus 2.8 ischium length, with 2 simple and 1 annulate setae; carpus 0.5 merus length, with 3 annulate setae; propodus 1.4 carpus length, with annulate seta; dactylus 0.4 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.4 basis length, of 2 articles with 3 pappose and 1 simple setae (Fig. 43D).

Pereopod 4 basis 1.2 all other articles together, with 3 pappose setae; ischium 0.1 basis length, with 3 annulate setae; merus 2.4 ischium length, with 1 simple and 3 annulate setae; carpus 0.9 merus length, with 2 simple and 4 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.4 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.3 basis length, of 2 articles with 2 pappose and 1 simple setae (Fig. 43E).

Pereopod 5 basis 0.8 all other articles together, with 4 pappose setae; ischium 0.1 basis length, with 1 simple and 3 annulate setae; merus 3.7 ischium length, with 3 annulate setae; carpus 1.1 merus length, with 1 simple, 1 plumose and 4 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.4 propodus length, with 3 simple setae terminally (Fig. 43F).

Telson 1.3 length of pleonite 6, without lateral setae, 5 simple terminal setae, central and outermost pair long, other pair short (Fig. 43G).

Uropod peduncles 1.8 pleonite 6 length, 1.4 telson length, with 3 microserrate setae medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 1.1 articles 2 and 3 together, with 10 microserrate setae medially; article 2 0.6 article 1 length, with 6 microserrate setae medially; article 3 0.8 article 2 length, with microserrate seta medially, simple terminal seta as long as article 3. Uropod exopod 0.9 length of endopod; article 1 1.7 length of article 2, with 4 plumose setae medially; article 2 0.6 article 1 length, with 4 plumose setae medially, simple seta laterally, simple terminal seta equal to article 2 length (Fig. 43G).

Paratype adult male, LACM CR 10847.

Adult male, 4.25 mm. Carapace unornamented; pseudorostral lobes 0.5 carapace length; eyelobe 0.15 carapace length, with 4 lenses; carapace subequal to pereonites. Pair of tubular penial lobes present ventrally on pereonite 5, between pereopods. Pleonite 1 with large ventral plate 2 pappose setae anteriorly, posterior corners with long pappose setae; pleonite 2 with small ventral plate, raised from surface, with 5 hooked simple setae anteriorly, 2 pappose setae posteriorly. Pappose setae holding antennal flagellum against pleonites, in groove between plates and ventral tergite (Fig. 44A–C).

Antennule peduncle article 1 equal to articles 2 and 3 together, unarmed; article 2 0.5 article 1 length, with 3 simple and 1 complex pedunculate setae; article 3 0.8 article 2 length, unarmed; main flagellum of 4 articles, 1.2 article 3 length, article 1 with 3 aesthetascs, article 3 with 3 aesthetascs; accessory flagellum of 3 articles, 0.5 length of main flagellum, with 2 simple setae (Fig. 44D).

Antenna extending to posterior border of pleonite 5, peduncle of 5 articles; articles 1–2 unarmed; article 3 with pappose seta; articles 4–5 with ranks of setae not completely encircling articles; flagellum with short articles, each article with seta (Fig. 44E).

Maxilliped 3 basis 1.6 all other articles together, with 15 pappose setae, 2 plumose setae at distal corner; ischium 0.01 basis length, with simple seta; merus 10.0 ischium length, with 5 plumose setae medially, plumose seta laterally; carpus 1.3 merus length, with 7 simple setae medially, plumose seta laterally; propodus 0.7 carpus length, with 8 simple setae; dactylus 0.4 propodus length, with 3 simple setae terminally; exopod 0.8 basis length, basal article with pappose seta, flagellum with plumo–annulate setae (Fig. 44F).

Pereopod 1 basis equal to all other articles together, with 7 pappose, 2 pappose–microserrate, and 2 plumose setae; ischium 0.03 basis length, unarmed; merus 5.0 ischium length, with pappose seta; carpus 2.2 merus length,

with 4 simple setae; propodus 0.9 carpus length, with 3 simple setae; dactylus 0.7 propodus length, with 3 simple setae and 4 simple setae terminally; exopod 0.8 basis length, basal article with 5 pappose setae, flagellum with plumo-annulate setae (Fig. 45A).

Pereopod 2 basis 0.9 all other articles together, with 7 pappose setae; ischium 0.02 basis length, unarmed; merus 10.0 ischium length, with pappose seta; carpus 2.8 merus length, with 1 pappose, 2 plumose and 7 simple setae; propodus 0.2 carpus length, unarmed; dactylus 2.2 propodus length, with 5 simple setae terminally; exopod 0.9 basis length, basal article with 6 pappose setae, flagellum with plumo-annulate setae (Fig. 45B).

Pereopod 3 basis 1.7 all other articles together, with plumose seta; ischium 0.08 basis length, with 3 annulate setae; merus 2.7 ischium length, with 3 simple setae; carpus 0.9 merus length, with 1 simple and 2 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.4 propodus length, with 2 simple setae terminally; exopod equal to basis length, basal article with 5 pappose setae, flagellum with plumo-annulate setae (Fig. 45C).

Pereopod 4 basis 1.2 all other articles together, with simple seta; ischium 0.09 basis length, with 3 simple setae; merus 3.3 ischium length, with 5 simple setae; carpus 0.8 merus length, with 2 simple and 2 annulate setae; propodus 0.8 carpus length, with annulate seta; dactylus 0.5 propodus length, with 3 simple setae terminally; exopod 0.9 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 45D).

Pereopod 5 basis 0.6 all other articles together, with 4 pappose, 2 plumose and 1 annulate setae; ischium 0.2 basis length, with 3 annulate setae; merus 2.8 ischium length, with 3 annulate setae; carpus 1.1 merus length, with 2 simple and 4 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.4 propodus length, with 3 setae terminally (Fig. 45E).

Penial lobes 0.7 length of pereopod 5 basis, curved anteriorly distally (Fig. 45E).

Telson 1.7 length of pleonite 6, without lateral setae, 5 micro serrate terminal setae, central and outer pair long, other pair short (Fig. 45F).

Uropod peduncles 2.6 pleonite 6 length, 1.6 telson length, with 19–20 micro serrate setae medially. Uropod endopod of 3 articles, equal to peduncle length; article 1 1.1 articles 2 and 3 together, with 12 micro serrate setae medially; article 2 0.5 article 1 length, with 7 micro serrate setae medially, 2 pedunculate setae laterally; article 3 0.9 article 2 length, with micro serrate seta medially, simple terminal seta subequal to article 3. Uropod exopod 0.9 length of endopod; article 1 1.4 article 2 length, with 3–4 plumose setae medially; article 2 0.7 article 1 length, with 4 plumose setae medially, simple seta laterally, simple terminal seta subequal to article 2 length (Fig. 45F).

Etymology. The species is named *californiensis* for location of collection, the coastal waters of California.

Depth. 33–20 m.

Distribution. Southern California.

Remarks. *Phallolamprops californiensis* females can be distinguished from *P. pribilofensis* females by the pseudorostrum, which is blunt in side and dorsal views in *P. californiensis*, and pointed in side and dorsal views in *P. pribilofensis*. Also, in *P. californiensis* the telson terminal central seta and outer pair of setae are long, and the inner pair is very short, while in *P. pribilofensis* the terminal setae are much more equal in length. The adult males can be distinguished from each other by the form of the penial lobes and the ventral elaboration of pleonites 1 and 2. In *P. californiensis* the penial lobes are distinctly hooked, pointing anteriorly, while in *P. pribilofensis* the penial lobes are simple tubes, and do not appear hooked. In *P. californiensis* the ventral structure on pleonite 1 has only two pairs of setae, while the ventral structure on pleonite 1 in *P. pribilofensis* has seven pairs of setae.

***Phallolamprops pribilofensis* n. sp.**

(Figs 46–49)

Type material. Holotype: ovigerous female, USNM 1274561, St. George, Pribilof Islands, Bering Sea, 73 m, October 1919. Paratypes: ovigerous female, dissected, USNM 1274562, collected with holotype; adult male, dissected, USNM 1274563, collected with holotype; adult male, USNM 1274564, collected with holotype.

Other material. Thirty ovigerous females, USNM 1274565, St. George, Pribilof Islands, 73 m, October 1919.

Diagnosis. Carapace without lateral ridges. Telson with 5 terminal setae, central seta shorter than outer pair, outer pair longer than inner pair. *Adult male* antennal flagellum extending past posterior border of pleonite 6. Telson with 5 setae, central seta long, other 4 seta short.

Description. Holotype ovigerous female, USNM 1274561; paratype ovigerous female, USNM 1274562.

Ovigerous female, 6.25 mm. Carapace with dorsal crest on anterior half, no other ornamentation; pseudorostral lobes 0.3 carapace length; eyelobe 0.04 carapace length; carapace equal to pereonites (Fig. 46A, B).

Antennule peduncle article 1 with 1 simple and 4 pedunculate setae; article 2 0.5 article 1 length, with 1 complex pedunculate and 2 simple setae; article 3 0.7 article 2 length, with 2 simple setae; main flagellum of 2 articles, with 3 simple setae and 1 aesthetasc; accessory flagellum of 2 articles, as long as article 1 of main flagellum, with 3 simple setae (Fig. 46C).

Antenna of 4 articles; article 1 with 2 plumose setae; article 2 with 2 plumose setae; article 3 with plumose seta; article 4 with 2 short simple setae terminally (Fig. 46D).

Mandible navicular, with 10 microsetate setae medially, *lacinia mobilis* with 2 cusps (Fig. 46E).

Maxillule with 2 endites; outer endite with 12 simple setae; inner endite with 1 simple and 3 microsetate setae; palp with 2 setae (Fig. 46F).

Maxilla with 3 endites; broad endite distal margin with simple and microsetate setae, medial margin with row of 17 microsetate setae, with microsetate seta behind row; medial narrow endite with 4 microsetate setae terminally; distal narrow endite with 5 microsetate setae terminally; both narrow endites extending past distal margin of broad endite (Fig. 46G).

Maxilliped 1 basis produced medially as broad lobe, with 4 simple and 2 microsetate setae distally, medial margin with 6 pappose setae, lateral margin with 3 plumose setae, basis lateral margin serrate; ischium absent; merus with simple seta; carpus 2.25 merus length, with 11 simple and 7 comb setae medially, 2 plumose setae laterally; propodus 0.7 carpus length, with 4 plumose and 5 simple setae; dactylus 0.4 propodus length, with 2 simple and 2 microsetate setae terminally (Fig. 46H).

Maxilliped 2 basis 1.3 all other articles together, with 2 plumose setae medially and 1 plumose and 1 simple setae laterally; ischium unarmed; merus equal to ischium, with plumose seta medially and pappose seta laterally; carpus 2.7 merus length, with 5 pappose and 4 simple setae medially, pappose seta laterally; propodus 0.7 carpus length, with 6 simple setae medially, 1 plumose and 1 simple setae laterally; dactylus 0.4 propodus length, with 3 simple and 1 microsetate setae (Fig. 46I).

Maxilliped 3 basis 1.9 all other articles together, with 13 plumose setae medially, distolateral corner expanded, with 3 plumose setae; ischium 0.08 basis length, with simple seta; merus 1.4 ischium length, with simple seta medially, pappose seta laterally; carpus 1.4 merus length, with 6 pappose setae medially, pappose seta laterally; propodus 0.6 carpus length, with 3 pappose setae medially, 1 plumose and 1 pappose setae laterally; dactylus 0.7 propodus length, with 5 simple and 1 microsetate setae terminally; exopod 0.9 basis length, basal article with 3 pappose and 1 plumose setae, flagellum with plumo-annulate setae (Fig. 47A).

Pereopod 1 basis 1.1 all other articles together, with 20 plumose setae and 3 stout pappose setae medially; ischium 0.04 basis length, unarmed; merus 5.0 ischium length, with 2 plumose setae; carpus 1.3 merus length, with 4 simple and 1 pappose setae; propodus 0.9 carpus length, with 9 simple setae; dactylus 0.9 propodus length, with 7 simple setae and 6 simple setae terminally; exopod 0.8 basis length, basal article with 6 plumose setae, flagellum with plumo-annulate setae (Fig. 47B).

Pereopod 2 basis as long as next 4 articles together, with 9 plumose setae and simple seta with subterminal setule; ischium 0.06 basis length, unarmed; merus 4.0 ischium length, with simple seta with subterminal setule; carpus 2.1 merus length, with 8 setae with single subterminal setule; propodus 0.5 carpus length, with 2 setae with single subterminal setule; dactylus 0.9 propodus length, with seta with single subterminal setule and 1 annulate and 4 setae with single subterminal setule terminally; exopod 1.3 basis length, basal article with 4 plumose setae, flagellum with plumo-annulate setae (Fig. 47C).

Pereopod 3 basis 1.4 all other articles together, with 11 plumose setae; ischium 0.1 basis length, with 3 annulate and 2 plumose setae; merus 1.7 ischium length, with 4 annulate setae; carpus 0.9 merus length, with 5 annulate setae; propodus 0.6 carpus length, with 1 simple and 1 annulate setae; dactylus 0.6 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.3 basis length, of 2 articles with 5 plumose setae (Fig. 47D).

Pereopod 4 basis as long as next 4 articles together, with 6 plumose setae; ischium 0.1 basis length, with 5 annulate setae; merus 2.5 ischium length, with 6 annulate and 1 simple setae; carpus 1.1 merus length, with 3 annulate and 1 simple setae; propodus 0.5 carpus length, with simple seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.4 basis length, of 2 articles with 1 simple and 4 plumose setae (Fig. 47E).

Pereopod 5 basis 0.6 all other articles together, with 1 simple and 6 plumose setae; ischium 0.2 basis length,

with 5 annulate setae; merus 2.3 ischium length, with 5 annulate setae; carpus 1.3 merus length, with 2 simple, 1 plumose, and 5 annulate setae; propodus 0.3 carpus length, with annulate seta; dactylus 0.8 propodus length, with 3 simple setae terminally (Fig. 47F).

Telson 1.6 length of pleonite 6, with 4 lateral setae, 5 terminal setae, outermost pair with single subterminal setule (Fig. 47G).

Uropod peduncles 1.9 pleonite 6 length, 1.2 telson length. Uropod endopod of 3 articles, 0.9 peduncle length; article 1 longer than articles 2 and 3 together, with 8 setae with single subterminal setule medially; article 2 0.4 article 1 length, with 2 setae with single subterminal setule medially, 1 seta with single subterminal setule laterally; article 3 equal to article 2, with seta with single subterminal setule and simple seta medially, with simple seta laterally, terminal seta equal to article 3 length, with single subterminal setule. Uropod exopod 0.8 length of endopod; article 1 0.7 article 2 length, with 2 setae with single subterminal setule; article 2 1.3 article 1 length, with 4–6 setae with single subterminal setule, terminal seta equal to article 2 (Fig. 47G).

Paratype adult male, USNM 1274563.

Adult male, 8.2 mm. Carapace with dorsal crest, ventrally expanded to accommodate antenna; pseudorostral lobes 0.5 carapace length; eyelobe 0.1 carapace length; carapace equal to pereonites. Pair of tubular penial lobes present ventrally on pereonite 5, between pereopods. Pleonite 1 with large ventral plate with lateral margins lined with complex plumose setae, posterior corners with hooked simple setae; pleonite 2 with 2 pairs hooked simple setae protruding from expansion; hooked setae holding antennal flagellum against pleonites (Fig. 48A–C).

Antennule peduncle article 1 longer than articles 2 and 3 together, covered with scales, margin serrate, with simple seta; article 2 0.5 length of article 1, with 6 simple and 1 pedunculate setae; article 3 0.7 article 2 length, with 3 simple setae; main flagellum of 3 articles, as long as article 3, with 3 simple setae and 2 aesthetascs; accessory flagellum of 3 articles, 0.8 length of main flagellum, with 4 simple setae (Fig. 48D).

Antenna extending to end of pereon; peduncle of 5 articles, articles 1–3 with pappose seta, articles 4–5 with ranks of setae, not completely encircling articles; flagellum with short articles, each article with seta (Fig. 48E–F).

Maxilliped 3 basis 1.8 all other articles together, with 6 plumose, 18 pappose and 1 simple setae; ischium 0.02 basis length, with pappose seta; merus 3.0 ischium length, with 2 pappose setae medially, plumose seta laterally; carpus 3.7 merus length, with 9 plumose and 6 simple setae medially, 1 simple and 1 plumose setae laterally, lateral margin serrate; propodus 0.5 carpus length, with 12 simple setae medially, 3 plumose and 1 simple setae laterally, lateral margin serrate; dactylus 0.4 propodus length, with 7 setae; exopod 0.9 basis length, basal article with 8 pappose setae, flagellum with plumo-annulate setae (Fig. 48G).

Pereopod 1 basis 1.4 all other articles together, with 28 pappose and 2 pappose–microserrate setae; ischium 0.02 basis length, unarmed; merus 3.0 ischium length, with 2 plumose setae medially, 2 plumose setae laterally; carpus 2.8 merus length, with 1 simple and 6 plumose setae medially, 2 plumose setae laterally; propodus 0.6 carpus length, with 4 simple setae medially, 1 simple and 1 plumose setae laterally; dactylus equal to propodus, with 12 simple setae; exopod 0.8 basis length, basal article with 10 pappose setae, flagellum with plumo-annulate setae (Fig. 49A).

Pereopod 2 basis 1.2 all other articles together, with 23 plumose and 1 pappose setae; ischium 0.04 basis length, unarmed; merus 4.0 ischium length, with 3 simple, 1 plumose, 1 pappose setae and seta with single subterminal setule; carpus 2.1 merus length, with 10 microserrate setae with subterminal setule, 2 pappose and 1 simple setae, margins serrate; propodus 0.3 carpus length, with 3 simple setae; dactylus 1.4 propodus length, with 4 microserrate setae with single subterminal setule, and 2 simple setae terminally; exopod 0.9 basis length, basal article with 10 plumose setae, flagellum with plumo-annulate setae (Fig. 49B).

Pereopod 3 basis 2.1 all other articles together, with 7 pappose and 5 plumose setae; ischium 0.07 basis length, with 1 plumose and 3 annulate setae; merus 2.0 ischium length, with 7 annulate setae; carpus equal to merus length, with 3 simple and 5 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.5 propodus length, with 3 simple setae terminally; exopod 0.9 basis length, basal article with 9 pappose setae, flagellum with plumo-annulate setae (Fig. 49C).

Pereopod 4 basis 1.4 all other articles together, with 9 plumose setae; ischium 0.07 basis length, with 3 annulate setae; merus 2.8 ischium length, with 4 simple and 3 annulate setae; carpus 1.1 merus length, with 1 plumose, 2 simple and 4 annulate setae; propodus 0.8 carpus length, with annulate seta; dactylus 0.6 propodus length, with 3 simple setae terminally; exopod 0.9 basis length, basal article with 7 plumose setae, flagellum with plumo-annulate setae (Fig. 49D).

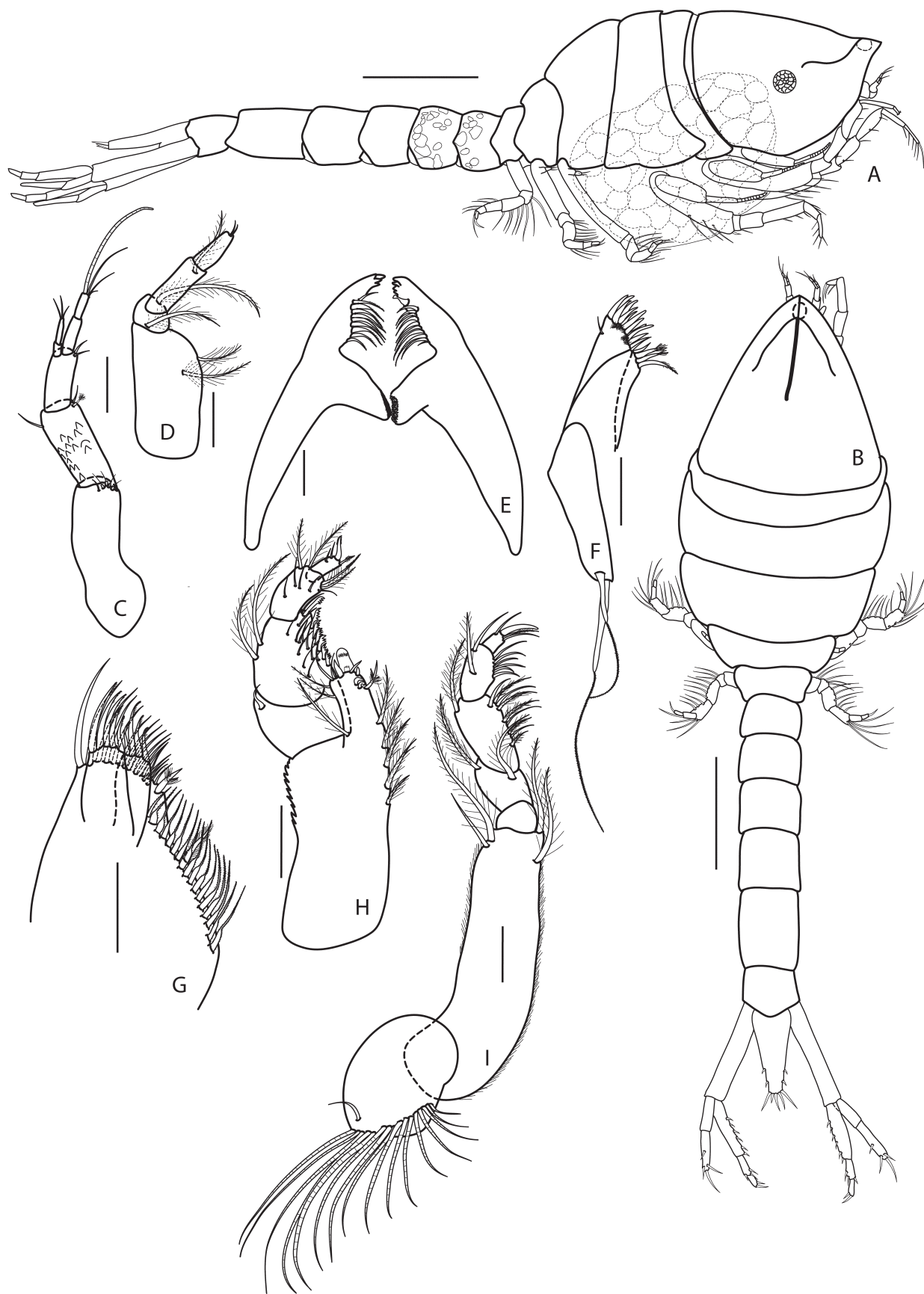


FIGURE 46. *Phallolamprops pribilofensis* n. sp. Holotype ovigerous female USNM 1264561, A, side view; B, dorsal view. Paratype ovigerous female USNM 1274562, C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

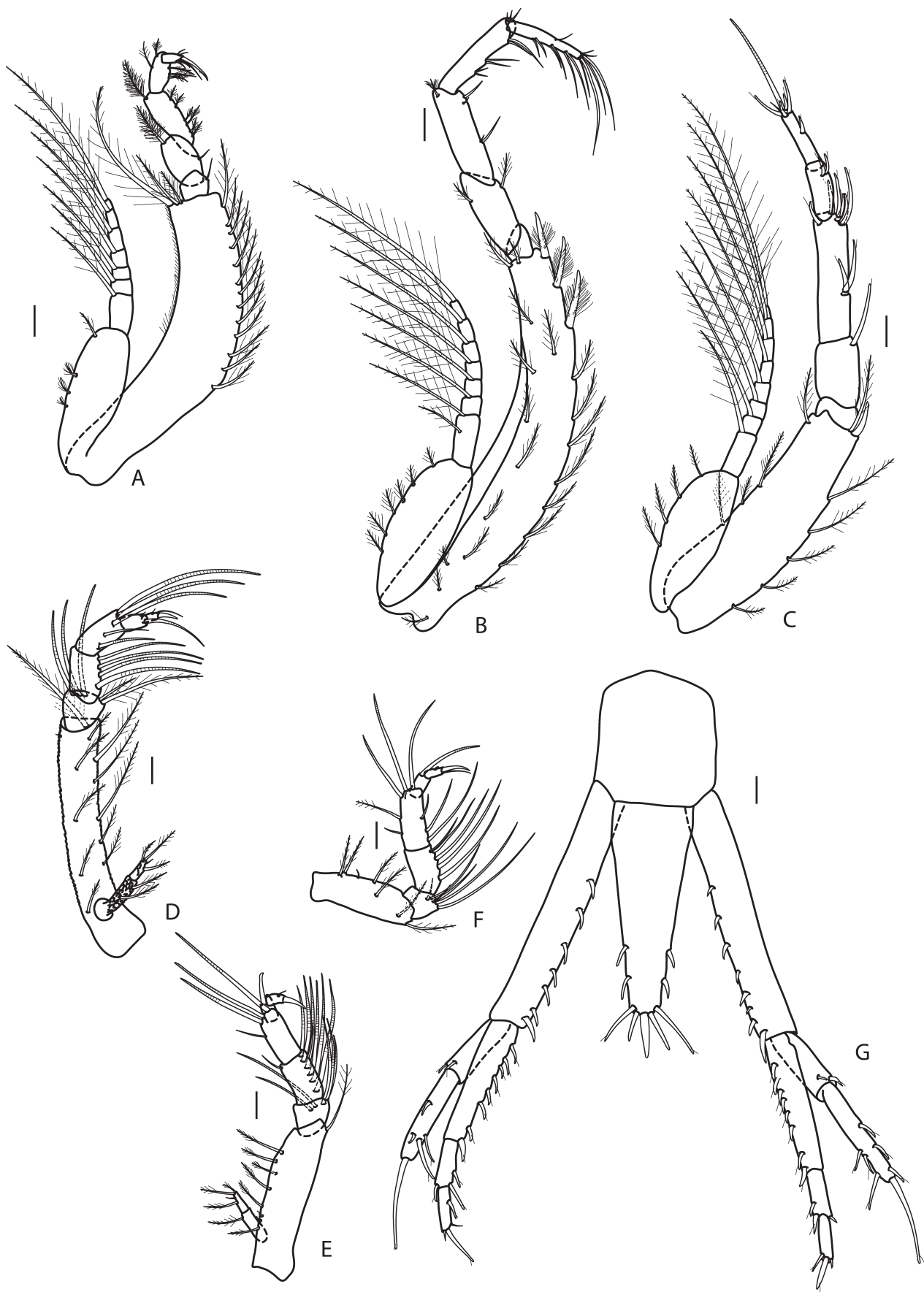


FIGURE 47. *Phallolamprops pribilofensis* n. sp. Paratype ovigerous female USNM 1274562, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.

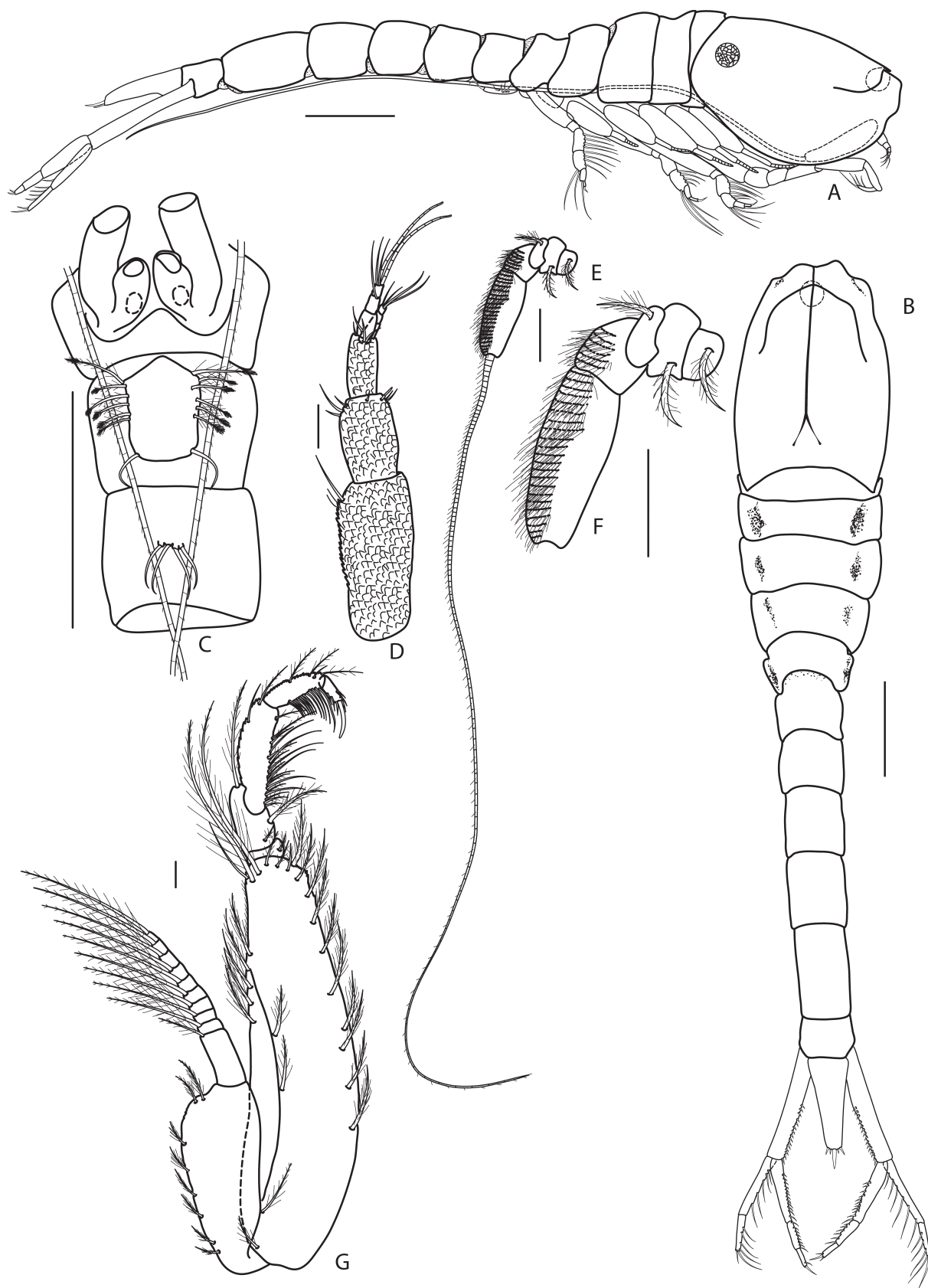


FIGURE 48. *Phallolamprops pribilofensis* n. sp. Paratype adult male USNM 1274563, A, side view, B, dorsal view, C, ventral view of pereonite 5 and pleonites 1 and 2; D, antennule; E, F, antenna; G, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.

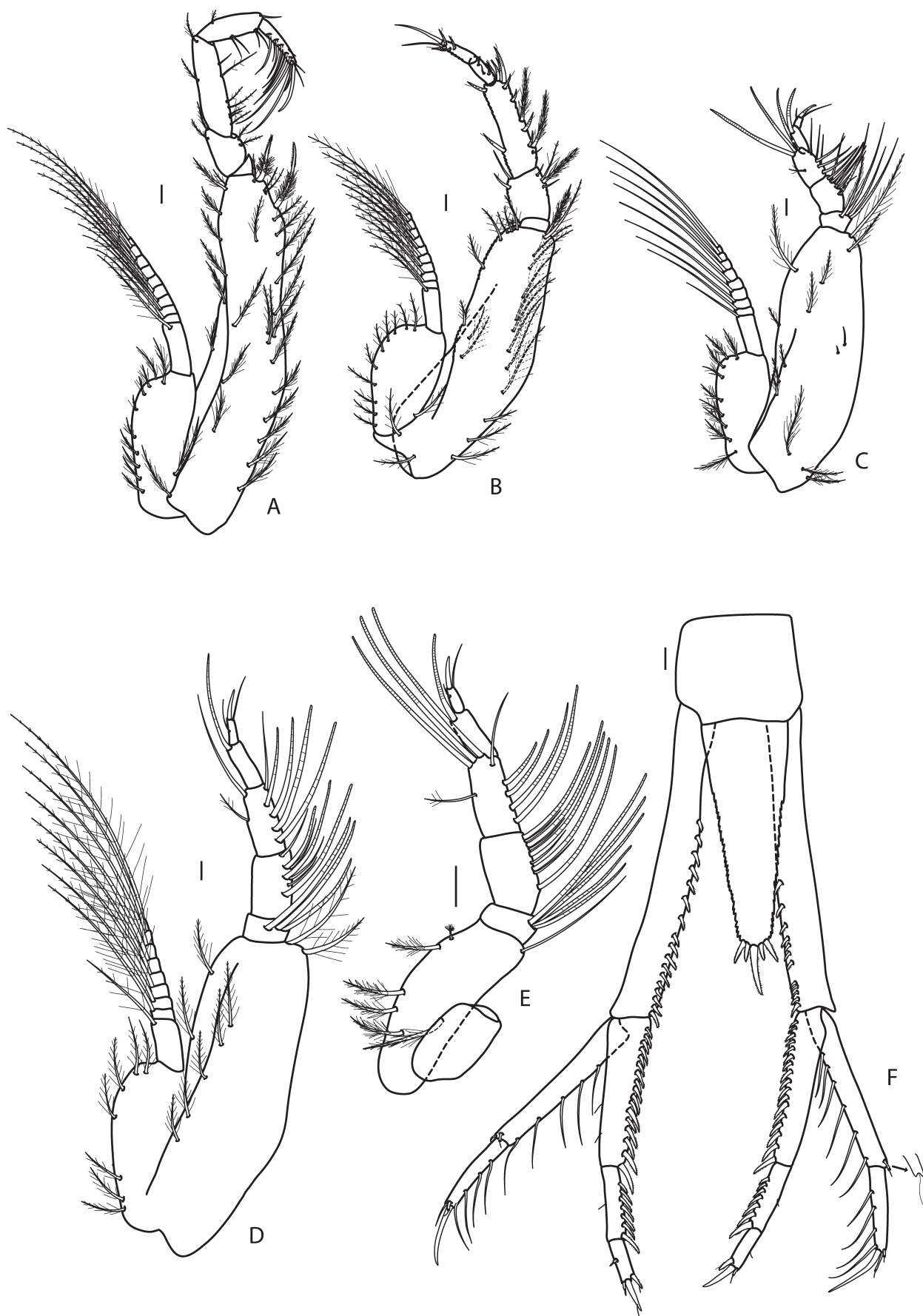


FIGURE 49. *Phallolamprops pribilofensis* n. sp. Paratype adult male USNM 1274563, A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

Pereopod 5 basis 0.8 all other articles together, with 1 simple, 1 complex pedunculate and 5 pappose setae; ischium 0.1 basis length, with 4 annulate setae; merus 3.3 ischium length, with 4 simple and 5 annulate setae; carpus 1.1 merus length, with 1 simple, 1 plumose and 7 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.6 propodus length, with 3 simple setae terminally (Fig. 49E).

Penial lobe 0.4 length of pereopod 5 basis, tubular (Fig. 62C, 49E).

Telson 2.3 length of pleonite 6, without lateral setae, 5 microserrate terminal setae, lateral margins serrate (Fig. 49F).

Uropod peduncles 3.1 pleonite 6 length, 1.3 telson length, with 17 microserrate setae medially. Uropod endopod of 3 articles, 0.9 peduncle length; article 1 longer than articles 2 and 3 together, with 16–17 microserrate setae medially; article 2 0.5 article 1 length, with 6–7 microserrate setae medially; article 3 0.5 article 2 length, with microserrate seta with single subterminal setule medially, 1 complex and 1 pedunculate setae laterally, terminal seta with subterminal setule 0.9 article 3 length. Uropod exopod equal to length of endopod; article 1 2.0 length of article 1, with 5–6 simple setae medially, complex seta laterally; article 2 0.5 article 1 length, with 4 simple setae medially, 2 complex setae laterally, simple terminal seta 0.7 length of article 2 (Fig. 49F).

Etymology. The species is named *pribilofensis* for the locality of collection, St. George, one of the Pribilof Islands.

Depth. 70 m.

Distribution. Pribilof Islands, Bering Sea, 56°N, 169°W

Remarks. Female *Phallolamprops californiensis* can be distinguished from female *P. pribilofensis* by the pseudorostrum, which is blunt in side and dorsal views in the former, and pointed in side and dorsal views in the latter. Also, in *P. californiensis* the central and outer pair of setae are long, and the inner pair is very short, while in *P. pribilofensis* the terminal setae are much more equal in length. The adult males can be distinguished from each other by the form of the penial lobes and the ventral elaboration of pleonites 1 and 2. In *P. californiensis* the penial lobes are distinctly hooked, pointing anteriorly, while in *P. pribilofensis* the penial lobes are simple tubes and do not appear hooked. In *P. californiensis* the ventral structure on pleonite 1 has only two pairs of setae, while the ventral structure on pleonite 1 in *P. pribilofensis* has seven pairs of setae.

***Phallolampropoides* n. gen.**

Type species. *Phallolampropoides chukchiensis* n. sp.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella short, accessory flagellum 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with short, clasping antenna, not extending to end of pereon, with penial lobes, without pleopods.

Species. *Phallolampropoides chukchiensis* n. sp.

Etymology. The genus name is named *Phallolampropoides* for the strong similarity to *Phallolamprops* in the possession of penial lobes in the male. Gender masculine.

Remarks. *Phallolampropoides* is quite similar to *Phallolamprops*, but can be differentiated by the short, clasping antenna of the male, and the lack of ventral elaboration on pleonites 1–2 in the adult male. If only females are present, the genus can be differentiated from *Hemilamprops* by pereopod 1, and from *Lamprops* by article 1 of the uropod exopod. In *Hemilamprops*, pereopod 1 has the basis shorter than the rest of the articles together, while in the new genus pereopod 1 has the basis longer than all other articles together. In *Lamprops*, article 1 of the uropod exopod is less than 0.5 the length of article 2, while in the new genus, article 1 of the uropod exopod is much greater than 0.5 the length of article 2. Unfortunately, without adult males, there is no way to differentiate between *Phallolampropoides* and *Phallolamprops* except by differentiating among the different species.

***Phallolampropoides chukchiensis* n. sp.**

(Figs 50–53)

Type material. Holotype: ovigerous female, USNM 1274566; paratype ovigerous female dissected, USNM 1264567; 70°16'30"N, 161°50'00"W, no depth, Chukchi Sea, SE of Icy Cape. Paratypes: adult male A, dissected, USNM 1274568; adult male B, dissected, USNM 1274569; 70°38'12"N, 160°02'30"W, 0.3–0.5 m, SE of Wainwright.

Other material. One subadult male, USNM 284872, 67°44'29"N, 163°33'45"W, 2–5.7 m, Chukchi Sea, NW of Cape Krusenstern; 1 female, USNM 284875, 66°35'N, 163°50'W, 0.3–0.5 m Chukchi Sea, NW of Kiwalik; 1 subadult male, USNM 284907, 70°48'20"N, 158°22'30"W, 0–1 m, Chukchi Sea, SE of Sinaru; 2 females, USNM 284908, 70°47'12"N, 158°40'00"W, 0–2 m, Chukchi, SE of Sinaru; 10 females, USNM 284909, 70°47'12"N, 158°40'00"W 0.5–2 m, Chukchi Sea, SE of Sinaru; 24 females, USNM 284919, 70°16'30"N, 161°50'00"W, Chukchi Sea, SE of Icy Cape; 1 female, USNM 284920, 70°17'03"N, 161°54'55"W, 0–1 m, Chukchi Sea, Icy Cape; 3 females, USNM 284921, 70°17'45"N, 161°59'30"W, 0–2 m, Chukchi Sea, Icy Cape; 1 adult male, 1 female (smashed), USNM 284917, 70°38'12"N, 160°02'30"W, 0.3–0.5 m, Chukchi Sea, SE of Wainwright.

Diagnosis. Carapace without lateral ridges. Telson 1.0 length of uropod peduncles, with 5 terminal setae, central seta longest. *Adult male* antennal flagellum extending to posterior border of pereonite 2, telson 1.3 length of uropod peduncles.

Description. Holotype ovigerous female, USNM 1274566; paratype ovigerous female, USNM 1274567.

Ovigerous female, 3.9 mm. Carapace unornamented; pseudorostral lobes 0.4 carapace length; eyelobe 0.1 carapace length, with 3 lenses; carapace equal to pereonites (Fig. 50A–B).

Antennule peduncle article 1 unarmed; article 2 0.8 article 1 length, with 3 simple setae; article 3 0.8 article 2 length, with 3 simple setae; main flagellum of 3 articles, with 7 simple setae and 2 aesthetascs; accessory flagellum of 3 articles, with simple setae (Fig. 50C).

Antenna of 3 articles, article 1 and 2 with pappose seta, article 3 with 4 short simple setae terminally (Fig. 50D).

Mandible navicular, with 7–9 microsetate setae medially, *lacinia mobilis* with 3 cusps (Fig. 50E).

Maxillule with 2 endites; outer endite with 12 microsetate setae; inner endite with 3 simple and 1 pappose setae; palp with 2 setae (Fig. 50F).

Maxilla with 3 endites; broad endite narrow, distal margin with pappose and simple setae; medial narrow endite with 4 microsetate setae terminally; distal narrow endite with 5 microsetate setae terminally; both narrow endites extending to distal margin of broad endite (Fig. 50G).

Maxilliped 1 basis produced medially as broad lobe, medial margin with 4 pappose setae, lateral margin with 5 pappose setae, 2 hook setae distally, distal margin with simple setae; ischium absent; merus unarmed; carpus 2.3 merus length, with 5 simple and 5 comb setae medially, plumose seta laterally, lateral margin with 3 teeth; propodus 0.6 carpus length, with 9 simple setae medially, 2 plumose setae laterally; dactylus 0.9 propodus length, with 2 simple setae terminally (Fig. 50H).

Maxilliped 2 basis equal to all other articles together, with 1 simple and 3 plumose setae distally; ischium 0.08 basis length, unarmed; merus 3.3 ischium length, with pappose seta medially, plumose seta laterally; carpus 1.2 merus length, with 2 simple and 5 plumose setae medially; propodus 0.8 carpus length, with 5 plumose setae medially, plumose seta laterally; dactylus 0.4 propodus length, with 4 simple setae terminally (Fig. 50I).

Maxilliped 3 basis 1.5 all other articles together, with 7 pappose setae medially, 3 plumose setae at distal corner; ischium 0.04 basis length, unarmed; merus 5.0 ischium length, with plumose seta medially, plumose seta laterally; carpus 1.2 merus length, with 4 simple and 3 plumose setae medially; propodus 0.6 carpus length, with 4 plumose setae medially, 1 simple and 1 plumose setae laterally; dactylus 0.6 propodus length, with 5 simple setae terminally; exopod equal to basis length, basal article with pappose seta, flagellum with plumo-annulate setae (Fig. 51A).

Pereopod 1 basis 1.2 all other articles together, with 17 pappose and 2 pappose–microsetate setae; ischium 0.04 basis length, unarmed; merus 5.0 ischium length, with simple seta medially, pappose seta laterally; carpus 1.7 merus length, with 2 pappose setae medially, 3 simple and 1 pappose setae laterally; propodus 0.6 carpus length, with 3 simple setae; dactylus 0.7 propodus length, with 4 simple setae terminally; exopod equal to basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 51B).

Pereopod 2 basis 0.9 all other articles together, with 19 pappose setae; ischium 0.04 basis length, unarmed; merus 6.0 ischium length, with 2 pappose setae; carpus 1.5 merus length, with 2 simple, 2 pappose, 1 microsetate and 1 pappose–microsetate setae; propodus 0.5 carpus length, with simple seta; dactylus 1.3 propodus length, with 8 simple setae terminally; exopod 1.2 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 51C).

Pereopod 3 basis 1.6 all other articles together, with 9 pappose and 1 plumose setae; ischium 0.09 basis length, with 2 annulate setae; merus 2.3 ischium length, with 2 simple and 1 pappose setae; carpus 0.8 merus length, with 1 plumose and 1 annulate setae; propodus 0.7 carpus length, unarmed; dactylus 0.6 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.4 basis length, of 2 articles with 5 pappose setae (Fig. 51D).

Pereopod 4 basis 1.1 all other articles together, with 5 pappose setae; ischium 0.1 basis length, with 1 pappose and 3 annulate setae; merus 2.3 ischium length, with 3 annulate setae; carpus equal to merus length, with 1 pappose and 5 annulate setae; propodus 0.8 carpus length, with annulate seta; dactylus 0.4 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.4 basis length, of 2 articles with 1 simple and 3 pappose setae (Fig. 51E).

Pereopod 5 0.8 basis all other articles together, with 4 pappose and 1 complex pedunculate setae; ischium 0.1 basis length, with 4 annulate setae; merus 2.7 ischium length, with 1 simple and 3 annulate setae; carpus 1.1 merus length, with 1 simple, 1 plumose and 6 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.5 propodus length, with 2 simple setae terminally (Fig. 51F).

Telson 1.6 length of pleonite 6, without lateral setae, 5 microsetate terminal setae, central seta longest (Fig. 51G).

Uropod peduncles 2.0 pleonite 6 length, 1.2 telson length, with microsetate seta medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 1.3 articles 2 and 3 together, with 5–6 microsetate setae medially; article 2 0.4 article 1 length, with 3 microsetate setae medially; article 3 0.9 article 2 length, medial margin serrate, with microsetate seta medially, terminal seta with single subterminal setule, subequal to article 3 length. Uropod exopod 0.9 length of endopod; article 1 1.5 article 2 length, with 4 plumose setae medially, complex seta distally; article 2 0.8 article 1 length, with 3 plumose setae medially, complex seta laterally, terminal seta complex, 0.7 article 2 length (Fig. 51G).

Paratype adult male, USNM 1274568; paratype adult male, USNM 1274569.

Paratype adult male, 2.7 mm. Carapace unornamented; pseudorostral lobes 0.45 carapace length; eyelobe 0.1 carapace length, with 5 lenses; carapace about as long as pereonites; pair of penial lobes ventrally on pereonite 5 (Fig. 52A–B).

Antennule peduncle article 1 equal to article 2, with 2 simple setae; article 2 equal to article 1 length, with 5 simple and 1 complex pedunculate setae; article 3 0.7 article 2 length with 3 simple setae; main flagellum of 3 articles, 1.7 article 3 length, with 3 simple setae and 3 aesthetascs; accessory flagellum of 2 articles, 0.9 main flagellum article 1 length, with 5 simple setae. Antennule large, 0.8 length of carapace (Fig. 52B–C).

Antenna extending past anterior border of pereonite 3; peduncle of articles 4 articles; article 1 unarmed; article 2 with pappose seta; article 3 unarmed; article 4 with ranks of setae, incompletely circling article; flagellum with 14 short articles, each with 2–3 setae, articulation at article 8, article 8 produced as lobe medially. Antenna 1.4 length of antennule, not including setae (Fig. 52B, D).

Maxilliped 3 basis 1.6 all other articles together, with 2 pappose and 6 plumose setae; ischium 0.03 basis length, unarmed; merus 5.0 ischium length, with plumose seta medially, plumose seta laterally; carpus 1.3 merus length, with 4 plumose setae medially, plumose seta laterally; propodus 0.9 carpus length, with 2 pappose setae medially, 2 pappose setae laterally; dactylus 0.6 propodus, with 4 setae terminally; exopod 0.9 basis length, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 52E).

Pereopod 1 basis equal to all other articles together, with 9 pappose setae; ischium 0.07 basis length, unarmed; merus 2.3 ischium length, with 4 pappose setae; carpus 1.9 merus length, with 2 pappose setae; propodus 1.3 carpus length, with 3 simple setae; dactylus 0.8 propodus length, with 6 simple setae terminally; exopod equal to basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 53A).

Pereopod 2 basis 0.7 all other articles together, with 1 simple and 4 pappose setae; ischium 0.6 basis length, unarmed; merus 3.5 ischium length, with 2 pappose and 1 microsetate setae; carpus 2.6 merus length, with 1 simple, 4 pappose and 4 microsetate setae; propodus 0.6 carpus length, with 2 setae with single subterminal setule; dactylus 1.4 propodus length, with 5 setae with single subterminal setule and annulate seta terminally; exopod 1.1 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 53B).

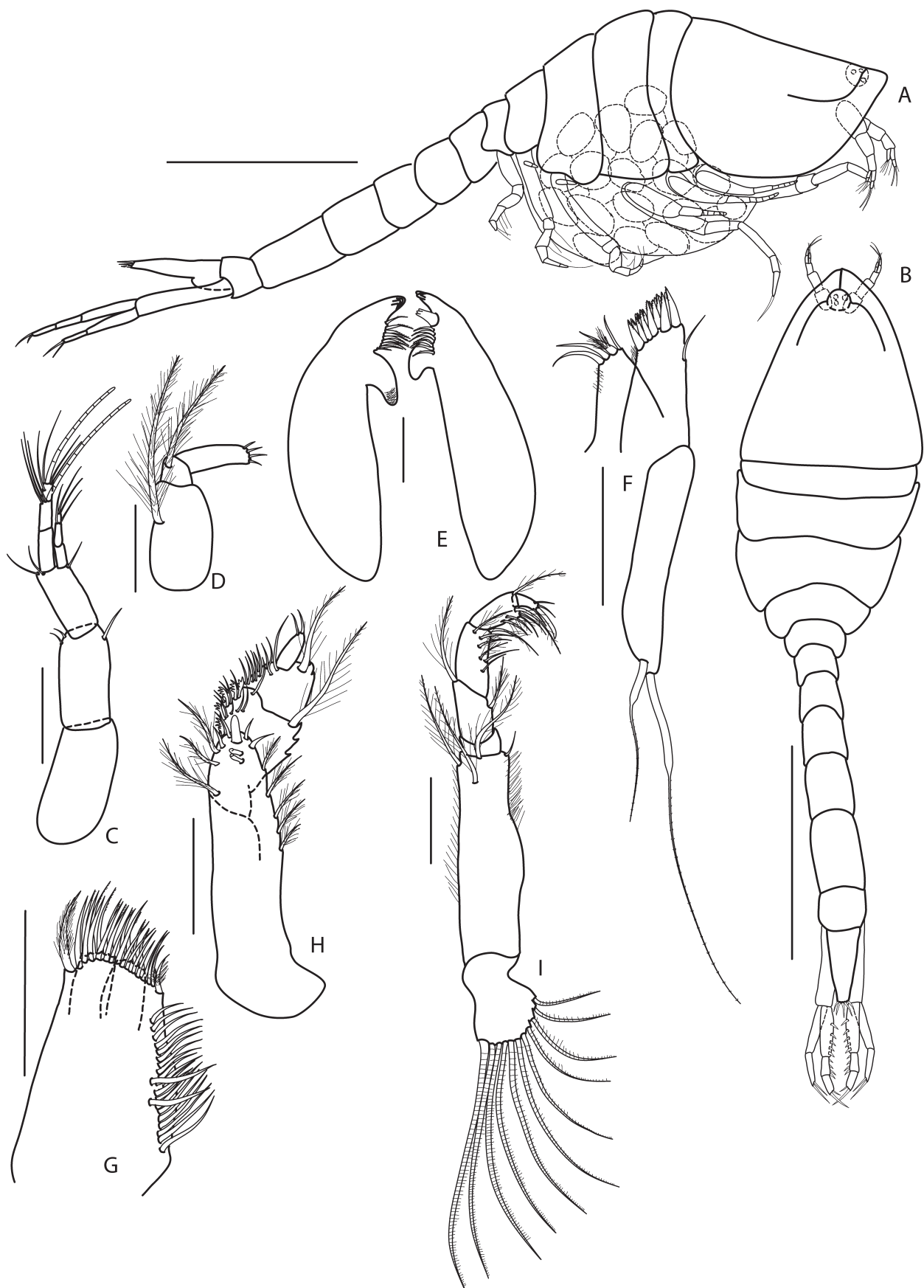


FIGURE 50. *Phallolampropoides chukchiensis* n. sp. Holotype ovigerous female USNM 1274566, A, side view, B, dorsal view. Paratype ovigerous female USNM 1274567, C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

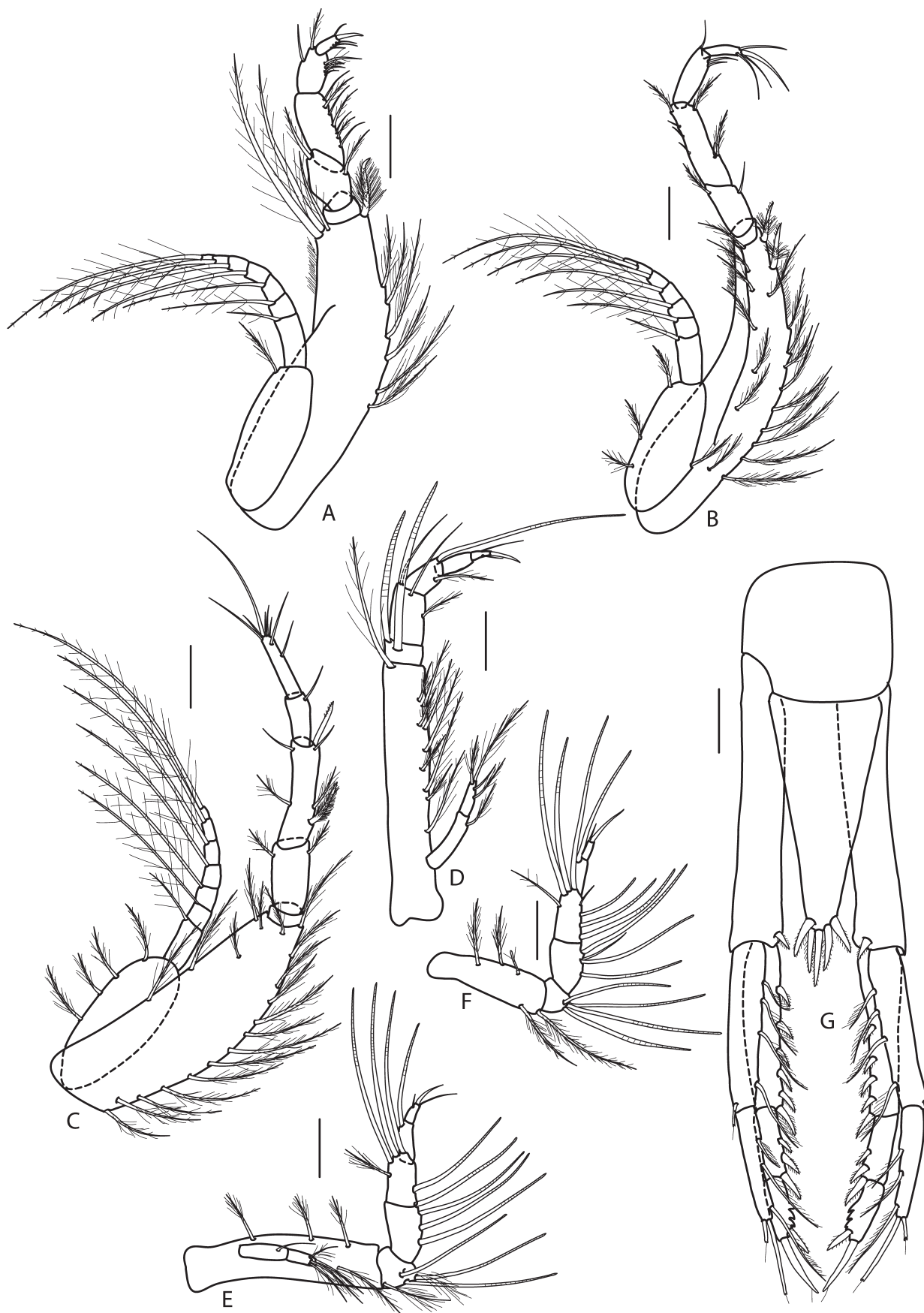


FIGURE 51. *Phallolampropoides chukchiensis* n. sp. Paratype ovigerous female USNM 1274567, A, maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, telson and uropods. Scale bars 0.1 mm.

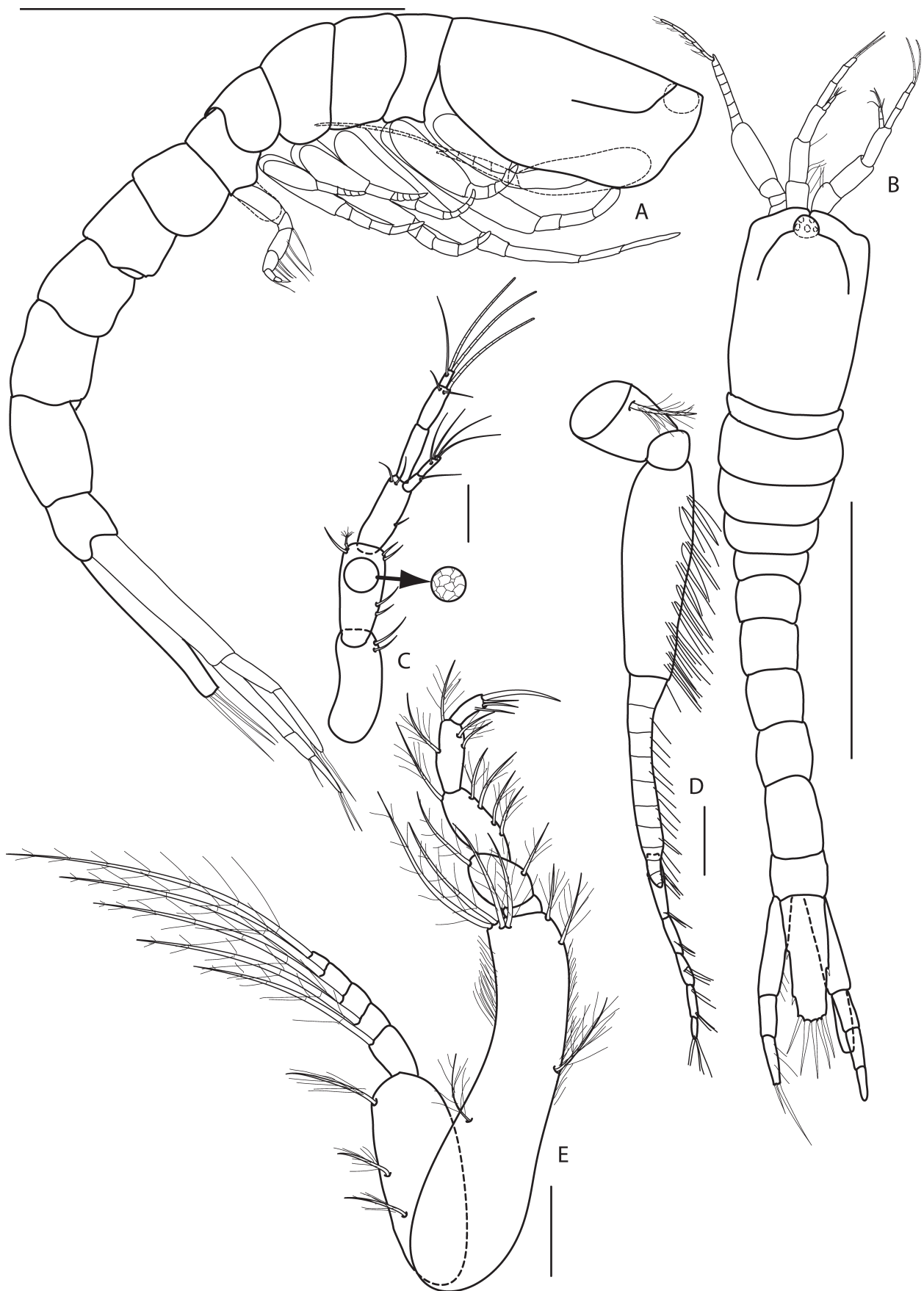


FIGURE 52. *Phallolampropoides chukchiensis* n. sp. Paratype adult male USNM 1274568, A, side view. Paratype adult male, USNM 1274569, B, dorsal view; C, antennule; D, antenna; E, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.



FIGURE 53. *Phallolampropoides chukchiensis* n. sp. Paratype adult male USNM 1274569, A, pereopod 1; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5. Paratype adult male USNM 1274568, F, telson and uropods. Scale bars 0.1 mm.

Pereopod 3 basis 1.5 all other articles together, with 4 pappose setae; ischium 0.08 basis length, with 1 simple and 1 annulate setae; merus 2.3 ischium length, with 3 annulate setae; carpus equal to merus length, with 1 simple and 3 annulate setae; propodus 0.6 carpus length, with annulate seta; dactylus 0.8 propodus length, with 3 simple setae terminally; exopod equal to basis length, basal article with 3 pappose setae, flagellum with plumo-annulate setae (Fig. 53C).

Pereopod 4 basis 0.9 all other articles together, with 1 simple and 2 pappose setae; ischium 0.2 basis length, with 3 annulate setae; merus 2.2 ischium length, with 4 annulate setae; carpus 0.8 merus length, with 1 simple and 3 annulate setae; propodus 0.5 carpus length, with annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod 1.2 basis length, basal article with 2 pappose setae, flagellum with plumo-annulate setae (Fig. 53D).

Pereopod 5 basis 0.6 all other articles together, with 1 simple and 3 pappose setae; ischium 0.3 basis length, with 2 annulate setae; merus 1.6 ischium length, unarmed; carpus equal to merus length, with 2 simple and 2 annulate setae; propodus 0.5 carpus length, with annulate seta; dactylus 0.5 propodus length, with 2 simple setae terminally (Fig. 53E).

Penial lobes 0.7 basis of pereopod 5, tubular (Fig. 53E).

Telson 2.5 length of pleonite 6, with 1 pair microserrate lateral setae, 5 long microserrate terminal setae, central seta shortest, outer pair of setae longest, 0.5 telson length (Fig. 53F).

Uropod peduncles 2.3 pleonite 6 length, 0.9 telson length, with 1–3 microserrate setae medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 1.4 articles 2 and 3 together, with 5–7 microserrate setae medially, microserrate seta laterally; article 2 0.3 article 1 length, with microserrate seta medially, microserrate seta laterally; article 3 1.1 article 2 length, with microserrate seta medially, microserrate seta laterally, terminal microserrate seta 1.5 length of article 3. Uropod exopod 0.8 length of endopod; article 1 0.8 length of article 2, with microserrate seta laterally; article 2 1.3 article 1 length, with 2 microserrate setae medially, 2–3 microserrate setae laterally, terminal microserrate seta equal to article 2 length (Fig. 53F).

Distribution. Chukchi Sea.

Etymology. The species is named *chukchiensis* after the locality of collection, the Chukchi Sea.

Depth. 0–5.7 m.

Distribution. Chukchi Sea, Arctic Ocean, 66–70°N, 158–164°W.

Remarks. This genus appears very much like *Lamprops* and *Alamprops*, and without the adult male it may be very difficult to place the females into the correct genus. In females of *Phallolampropoides chukchiensis* the telson is barely shorter than the uropod peduncles, while in *Phallolamprops californiensis* females the telson is distinctly shorter (about 0.7) than the uropod peduncles. In females of *P. chukchiensis* the uropod exopod extends to the midpoint of article 3 of the uropod endopod, while in *Phallolamprops pribilofensis* the uropod exopod extends only to the distal border of article 2 of the uropod endopod.

***Platysympus* Stebbing, 1912**

Platysympus Stebbing, 1912: 143–144.

Platyaspis.—Sars, 1870: 158.

Type species. *Platyaspis typicus* Sars, 1870, by monotypy and original designation.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp absent. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson less than 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with rudimentary or absent exopod on pereopod 2, rudimentary or absent exopods on pereopods 3–4, without pleopods. *Male* with short antenna, not extending past pereon, without penial lobes, with 3 pairs of pleopods.

Species. *Platysympus brachyurus* (Zimmer, 1907), *P. camelus* Day, 1978, *P. compressus* Day, 1978, *P. depressus* Day, 1978, *P. japonicus* Gamô, 1975, *P. muranoi* Gamô, 1980, *P. ovalis* Gamô, 1987, *P. pacificus* Corbera, 2006, *P. phylloides* Day, 1978, *P. quadrangulatus* Gamô, 1987, *P. tricarinatus* Hansen, 1920, *P. typicus* (Sars, 1870).

Remarks. The most similar genera to *Platysympus* are *Aplatysympus* and *Paraplatysympus*, which are differentiated by the state of the maxillule palp and pereopod 5. In *Aplatysympus* pereopod 5 is longer than the pereopod 4 basis, as in *Platysympus*, but the maxillule palp is present and bears 2 setae. In *Paraplatysympus* the maxillule palp is present and bears 2 setae, and pereopod 5 is shorter than the basis of pereopod 4.

Key to the species of *Platysympus*

1. Telson with lateral setae 2
- Telson without lateral setae, may be strongly serrate 3
2. Carapace with pair of dorsolateral ridges *P. pacificus*
- Carapace with single medial and 1 pair ridges *P. tricarinatus*
3. Carapace very flat, without branchial swellings or ridges 4
- Carapace with ridges or branchial swellings 5
4. Carapace as wide as long *P. phylloides*
- Carapace longer than wide *P. brachyurus*
5. Telson less than twice as long as pleonite 6 6
- Telson at least twice as long as pleonite 6 7
6. Carapace in lateral view with 2 distinct humps dorsally *P. camelus*
- Carapace in lateral view with small undulations or none *P. ovalis*
7. Uropod rami equal *P. muranoi*
- Uropod endopod longer than exopod 8
8. Carapace rectangular in dorsal view *P. quadrangulatus*
- Carapace oval or round in dorsal view 9
9. Dorsal part of carapace compressed laterally *P. compressus*
- Carapace not compressed laterally 10
10. Telson less than 0.5 length of uropod peduncles *P. japonicus*
- Telson more than 0.5 length of uropod peduncles 11
11. Carapace with mid-dorsal ridge *P. typicus*
- Carapace without mid-dorsal ridge *P. depressus*

Platysympus brachyurus (Zimmer, 1907)

Platyspis brachura Zimmer, 1907: 374.

Platysympus brachyurus.—Zimmer, 1913: 458–460, pl. 6 figs 56–58.

Type material. Holotype: ZMB 18344, male. Winter Station, Antarctica, 66°02'S, 89°38'E.

Diagnosis. Carapace without branchial swellings, without ridges, in lateral view without dorsal humps. Telson 2.0 pleonite 6, 0.6 uropod peduncles, without lateral setae. *Adult male* unknown.

Depth. 385 m.

Distribution. Antarctica, 55°2'S, 89°38'E.

Remarks. As Day (1978) noted, this species is only known from a single, incomplete specimen, and thus the generic designation may not be correct. However, the most similar species is *Platysympus phylloides*, and it can be differentiated by the carapace. In *P. phylloides* the carapace is very flattened, and is at least as wide as long, while in *P. brachyurus* the carapace is not as flattened and is longer than wide.

Platysympus camelus Day, 1978

Platysympus camelus Day, 1978: 162–165, fig. 9A–L.

Type material. Holotype: SAMC A15684, male. North Natal, South Africa, 27°59'S, 32°40'E. Not seen.

Diagnosis. Carapace with branchial swellings, with 1 pair lateral ridges, in lateral view with dorsal humps. Telson 1.9 pleonite 6, 0.5 uropod peduncles, without lateral setae. *Adult male* unknown.

Depth. 188–550 m.

Distribution. South Africa, 27°59'S, 32°40'E.

Remarks. The undulating dorsal line of the carapace in lateral view is shared by *Platysympus japonicus* and *P. muranoi*. However, *P. japonicus* and *P. muranoi* can be differentiated by having a longer telson than *P. camelus*. In *P. camelus* the telson is less than twice the length of pleonite 6, while in the other two species the telson is more than twice the length of pleonite 6.

***Platysympus compressus* Day, 1978**

Platysympus compressus Day, 1978: 160–162, fig. 8A–J.

Type material. Holotype: SAMC A15681, adult male. North Natal, South Africa, 27°09'S, 32°50'E. Not seen.

Diagnosis. Carapace with branchial swellings, without ridges, in lateral view without dorsal humps. Telson 2.3 pleonite 6, 0.6 uropod peduncles, without lateral setae. *Adult male* antennal flagellum short, extending to end of pereon; antennule with group of aesthetascs on main flagellum article 1.

Depth. 800–805 m.

Distribution. South Africa, 27°9'S, 32°50'E.

Remarks. The carapace is unique within the genus, in being compressed laterally above the marginal carina.

***Platysympus depressus* Day, 1978**

Platysympus depressus Day, 1978: 157–160, fig. 7A–L.

Type material. Holotype: SAMC A15683, adult male. Cape Peninsula, South Africa, 34°25'S, 17°45'E. Not seen.

Diagnosis. Carapace with branchial swellings, with several short ridges, in lateral view without dorsal humps. Telson 2.0 pleonite 6, 0.7 uropod peduncles, without lateral setae. *Adult male* carapace with weaker ridges than in female; antennule with group of aesthetascs on main flagellum article 1; antennal flagellum short, not extending to end of pereon, peduncle article 5 encircled with short setae and with 2 larger aesthetascs in each ring.

Depth. 440–850 m.

Distribution. South Africa, 12°14.4'S, 46°41'E and 34°25'S, 17°45'E.

Remarks. The most similar species are *Platysympus typicus* and *P. tricarinatus*, which can be differentiated from *P. depressus* by the presence of a mid-dorsal ridge. In *P. depressus* there is no mid-dorsal ridge.

***Platysympus japonicus* Gamô, 1975**

Platysympus japonicus Gamô, 1975: 229–235, figs 1–2.

Type material. Holotype: NSMT, adult female. Sagami Bay, Japan, 34°44.8'N, 139°8.5'E. Not seen.

Diagnosis. Carapace with branchial swellings, with 1 pair ridges, in lateral view with single dorsal hump at posterior margin. Telson 2.1 pleonite 6, 0.5 uropod peduncles, without lateral setae. *Adult male* unknown.

Depth. 480 m.

Distribution. Sagami Bay, Japan, 34°44.8'N, 139°8.5'E.

Remarks. The most similar species are *Platysympus typicus* and *P. depressus*. In *P. depressus* and *P. typicus* the telson is longer than 0.5 the uropod peduncle length, while in *P. japonicus* the telson is less than 0.5 uropod peduncle length.

***Platysympus muranoi* Gamô, 1980**

Platysympus muranoi Gamô, 1980: 1–6, figs 1–2.

Type material. Holotype: NSMT, subadult female. Bôshô Peninsula, Japan, 34°57.5'N, 140°7'E. Not seen.

Diagnosis. Carapace with branchial swellings, without ridges, in lateral view with posterior dorsal hump. Telson 2.0 pleonite 6, 0.9 uropod peduncles, without lateral setae. *Adult male* unknown.

Depth. 260–335 m.

Distribution. Bôso Peninsula, Japan, 34°57'5"N, 140°7'E.

Remarks. The most similar species is *Platysympus japonicus*, also known from Japanese waters. However, in *P. japonicus* the telson less than 0.5 the length of the uropod peduncles, while in *P. muranoi* the telson is subequal to the uropod peduncles.

***Platysympus ovalis* Gamô, 1987**

Platysympus ovalis Gamô, 1987: 2, figs 1–2.

Type material. Holotype: NSMT, female. Paratype: NSMT, female. Suruga Bay, Japan, 34°42'–34°43.3'N, 138°47'7"–138°41.6'E. Not seen.

Diagnosis. Carapace with branchial swellings, with 3 pairs weak ridges, in lateral view without dorsal humps. Telson 1.6 pleonite 6, 0.5 uropod peduncles, without lateral setae. *Adult male* unknown.

Depth. 367–375 m.

Distribution. Suruga Bay, Japan, 34°42'–34°43.3'N, 138°47'7"–138°41.6'E.

Remarks. This species is similar to the other Japanese species, *Platysympus japonicus* and *P. muranoi*, but can be differentiated by the longer telson and the carapace in lateral view. In both *P. japonicus* and *P. muranoi* the telson is less than 0.5 the uropod peduncle length and the carapace has a distinct hump at the posterior edge, while in *P. ovalis* the telson is longer than 0.5 the uropod peduncle length and the carapace does not have a distinct hump at the posterior edge.

***Platysympus pacificus* Corbera, 2006**

Platysympus pacificus Corbera, 2006: 160–161, fig. 11.

Type material. Holotype: MNHN Cu1009, preparatory female. New Caledonia, 24°19'S, 167°49'E.

Diagnosis. Carapace with branchial swellings, with 1 pair dorsolateral ridges, lateral view not shown. Telson 2.5 pleonite 6, 0.6 uropod peduncles, with 2 pairs lateral setae. *Adult male* unknown.

Depth. 1395–1410 m.

Distribution. New Caledonia, 24°19'S, 167°49'E

Remarks. The most similar species is *Platysympus japonicus*, however in *P. japonicus* the telson is less than 0.5 the uropod peduncle length and the lateral dorsal pair of carinae meet at the midline and form a dorsal crest on the anterior half of the carapace. In comparison, in *P. pacificus* the telson is more than 0.5 the uropod peduncle length, and the lateral dorsal pair of carinae are present on the posterior half of the carapace and do not meet at the midline.

***Platysympus phylloides* Day, 1978**

Platysympus phylloides Day, 1978: 155–156, fig. 6A–K.

Type material. Holotype: SAMC A15682, adult female. Cape Peninsula, South Africa, 34°40'S, 17°50'E. Not seen.

Diagnosis. Carapace without branchial swellings, without ridges, in lateral view without dorsal humps. Telson 2.2 pleonite 6, 0.7 uropod peduncles, without lateral setae. *Adult male* unknown.

Depth. 850–1200 m.

Distribution. South Africa, 34°40'S, 17°50'E.

Remarks. This species is unique within the genus for the very flattened carapace, although *Misceolamprops*

concaus is almost as flattened, but in *M. concaus* the anterior margin of the carapace is deeply excavate in dorsal view, whereas in *P. phylloides* the carapace anterior margin is not excavate.

***Platysympus quadranguatus* Gamô, 1987**

Platysympus quadranguatus Gamô, 1987: 6, figs 3–6.

Type material. Holotype: NMST, female. Allotype: NMST, subadult male. Suruga Bay, Japan, 34°34.4'N, 138°42.4'E. Not seen.

Diagnosis. Carapace with branchial swellings, with 2 pairs weak lateral ridges, in lateral view with single posterior dorsal hump. Telson 1.9 pleonite 6, 0.6 uropod peduncles, with 1 pair lateral setae. *Adult male* unknown.

Depth. 197–201 m.

Distribution. Suruga Bay, Japan, 34°34.4'N, 138°42.4'E.

Remarks. The carapace of *Platysympus quadranguatus* is distinctive in being subrectangular in dorsal view, while other *Platysympus* species are oval or a truncate oval in dorsal view.

***Platysympus tricarinatus* Hansen, 1920**

Platysympus tricarinatus Hansen, 1920: 52–53, pl. 4 fig. 3a–c.

Type material. Syntypes: UZMC. South Island, 62°57'N, 19°58'W. Not seen.

Diagnosis. Carapace with branchial swellings, with 1 pair dorsolateral ridges, in lateral view without dorsal humps. Telson 1.8 pleonite 6, 0.7 uropod peduncles, with 1–2 pairs lateral setae. *Adult male* unknown.

Depth. 219–1659 m.

Distribution. Northeast boreal Atlantic, Mediterranean, Arctic.

Remarks. The most similar species is *Platysympus typicus*. While there has been discussion of the difficulty in distinguishing *P. tricarinatus* and *P. typicus*, because of the similarities in the carapace and the variability in the strength of the dorsal carinae, the two species at present can be differentiated by the presence of lateral setae on the telson in *P. tricarinatus*. In *P. typicus* there are no lateral setae on the telson, although the serration of the lateral margins of the telson can be variable in strength.

***Platysympus typicus* (Sars, 1870)**

Platysypis typicus Sars, 1870: 159; 1900: 27, pl. 19–20.—Corey, 1981: 1732.—Jones, 1985: 431.

Platysympus typicus.—Stebbing, 1912: 144; 1913: 61.—Corbera & Galil, 2001: 137–140, figs 2–3.

Type material. Syntypes: deposition unknown. Lofoten, Norway. Not seen.

Other material. Two ovigerous females, 16 subadult females, 3 adult males, 13 other, MNHN Cu224, 240–360 m.

Diagnosis. Carapace with branchial swellings, with weak ridges, in lateral view without dorsal humps. Telson 2.5 pleonite 6, 0.8 uropod peduncles, without lateral setae. *Adult male* carapace streamlined, generally with less serration than in female; antennule with group of aesthetascs on first article of main flagellum; antennal flagellum short, extending to end of pereon.

Depth. 220–2857 m.

Distribution. North Atlantic, Norway to Mediterranean Sea.

Remarks. There has been discussion about the lack of distinction between *Platysympus typicus* and *P. tricarinatus*, due to the varying presence of “dorsal keels” in *P. typicus*, as discussed in Corbera & Galil (2001, and references within). However, Hansen (1920) illustrated the telson of *P. tricarinatus* with lateral setae, and there has been no reference to *P. typicus* having lateral setae on the telson. The edges of the telson may be serrate, and the strength of the serrations may vary in *P. typicus* (Corbera & Galil 2001), but there are no setae present.

Platytyphlops Stebbing, 1912

Platytyphlops Stebbing, 1912: 159.

Paralamprops.—Sars, 1887 (in part): 6, 26. —Calman, 1912: 631, 634, fig. 29–39.—Day, 1978: 146–148.

Type species. *Platytyphlops peringueyi* Stebbing, 1912, by monotypy.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 shorter than basis of pereopod 4. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary or absent exopods on pereopods 3–4, without pleopods. *Male* with long antenna, extending past pereon, without penial lobes, with 3 pairs of pleopods. Gender masculine.

Species. *Platytyphlops arafurensis* (Jones, 1969) **n. comb.**, *P. asperus* (Zimmer, 1907) **n. comb.**, *P. bamberi* **n. sp.**, *P. carpusserratus* (Mühlenhardt-Siegel, 2005) **n. comb.**, *P. cherkii* (Reyss, 1978a) **n. comb.**, *P. corolliferus* (Gamô, 1984) **n. comb.**, *P. crosnieri* (Corbera, 2006) **n. comb.**, *P. echinatus* **n. sp.**, *P. girardi* (Reyss, 1978a) **n. comb.**, *P. grimaldii* (Fage, 1929) **n. comb.**, *P. latus* (Hale, 1946) **n. comb.**, *P. ledoyeri* (Reyss, 1978a) **n. comb.**, *P. lowryi* **n. sp.**, *P. mawsoni* (Hale, 1937) **n. comb.**, *P. orbicularis* (Calman, 1905) **n. comb.**, *P. peringueyi* (Stebbing, 1912) **n. comb.**, *P. petrescui* **n. sp.**, *P. racovitzai* (Petrescu & Wittmann, 2003) **n. comb.**, *P. rossi* (Jones, 1971) **n. comb.**, *P. semiornatus* (Fage, 1929) **n. comb.**, *P. taylorae* **n. sp.**, *P. tuberculatus* (Roccatagliata, 1994) **n. comb.**

Remarks. The species placed in *Platytyphlops* resemble *Paralamprops*, but possess a maxillule palp with 2 setae, and those for which the state of the palp is unknown. When Sars (1887) established *Paralamprops*, he noted the unusual absence of the maxillule palp. Despite this, species with a palp were ascribed to *Paralamprops* by Fage (1929), Gamô (1984), Day (1978), Petrescu & Wittmann (2003), and Jones (1971). Most of these authors did not address the issue of the palp, ignoring the absence of the palp as a defining character for the genus. Calman (1912) and Day (1978) did address the issue of the palp, acknowledging the taxonomic significance of the palp absence. However, while both Calman (1912) and Day (1978) suggested that *Paralamprops* should be separated into two genera, those with and without the palp, neither of them did so, and in fact Day synonymized *Platytyphlops*, a genus with a maxillule palp with 2 setae, with *Paralamprops*. Day's (1978) justification for mixing species with a palp and without a palp in the genus *Paralamprops sensu lato* was the difficulty in accessing the character as well as the lack of information for some species. However, both of these difficulties exist for mature male characters used in generic definitions, when it is very common in the Cumacea to encounter only females or immature males. However, the male characters are utilized because they are seen as of considerable systematic value, as is the palp. In keeping with Sars' (1887) original concept of *Paralamprops* as lacking a maxillule palp, all species placed in *Paralamprops* to date that possess the palp are removed to *Platytyphlops*. As the basal state of the maxillule palp is to be present and with 2 setae, it is most conservative to assume that species in which the state of the palp is unknown possess a palp with 2 setae. Thus, species formerly placed in *Paralamprops* in which the state of the palp is unknown are also included in the genus.

Key to the species of *Platytyphlops*

1. Carapace with multiple ridges, not including marginal carina 11
- Carapace without ridges except marginal carina, may have branchial swellings 2
2. Marginal carina serrate 4
- Marginal carina entire 3
3. Uropod peduncle with 5 setae medially *P. cherkii*
- Uropod peduncle with more than 10 setae medially *P. orbicularis*
4. Carapace covered with teeth, spines or tubercles, dorsal of marginal carina 5
- Carapace with few or no teeth, spines or tubercles 8
5. Carapace covered with acute teeth or spines 6
- Carapace covered with blunt tubercles 7
6. Carapace with acute teeth or spines dorsal of margin carina only. P5 minute, shorter than article 1 of antennule peduncle.
- *P. echinatus* **n. sp.**
- Carapace with acute teeth or spines ventral of marginal carina. P5 longer than article 1 of antennule peduncle

7.	Antennule article 1 expanded as wing-like shape	<i>P. bamberi</i> n. sp.
-	Antennule article 1 normal, cylindrical shape	<i>P. tuberculatus</i>
8.	Antennule accessory flagellum at least as long as main flagellum	<i>P. petrescui</i> n. sp.
-	Antennule accessory flagellum shorter than main flagellum	10
9.	Carapace as wide as long	<i>P. girardi</i>
-	Carapace distinctly longer than wide	<i>P. semiornatus</i>
10.	Marginal carina teeth equal in size throughout	<i>P. carpusserratus</i>
-	Marginal carina teeth decreasing in size posteriorly	<i>P. corolliferus</i>
11.	Uropod endopod article 1 twice the length of articles 2 and 3 together or more	12
-	Uropod endopod article 1 less than twice the length of articles 2 and 3 together	15
12.	Telson with 5 terminal setae	13
-	Telson with 3 terminal setae	14
13.	Uropod endopod article 1 with 28 or more setae	<i>P. lowryi</i> n. sp.
-	Uropod endopod article 1 with 20 setae	<i>P. arafurensis</i>
14.	Submedian pair of ridges short, produced as blunt tooth	<i>P. peringueyi</i>
-	Submedian pair of ridges half length of carapace	<i>P. grimaldii</i>
15.	Carapace with 1 ridge parallel to marginal carina, short submedian pair of ridges	<i>P. ledoyeri</i>
-	Carapace with at least 3 pairs of ridges	16
16.	Eye lobe with at least 2 lenses or tumidities	17
-	Eye lobe entirely without lens or tumidities	19
17.	Carapace ridges tall, narrow, with undulating hyaline margin	<i>P. racovitzae</i>
-	Carapace ridges blunt	18
18.	Carapace ridges with margins not undulate, pseudorostrum pointed	<i>P. mawsoni</i>
-	Carapace ridges incomplete, pseudorostrum excavate	<i>P. latus</i>
19.	Central terminal seta on telson much shorter than outer pair terminal setae	<i>P. taylorae</i> n. sp.
-	Terminal setae on telson equal	20
20.	Telson much shorter than uropod peduncles	21
-	Telson as long or longer than uropod peduncles	<i>P. asperus</i>
21.	Ridge on the pseudorostrum	<i>P. rossi</i>
-	Pseudorostrum without ridges	<i>P. crosnieri</i>

***Platytyphlops arafurensis* (Jones, 1969) n. comb.**

Paralamprops arafurensis Jones, 1969: 122–123, fig. 11a–h.

Type material. Holotype: UZMK, ovigerous female. Arafura Sea, 7°34'S, 132°44'E.

Diagnosis. Carapace with 2 lateral ridges, marginal carina entire, ridge on pseudorostrum; eyelobe with lenses or tumidities. Antennule article 1 not expanded; accessory flagellum subequal to main flagellum. Telson shorter than uropod peduncles, with 5 terminal setae, terminal setae equal. Uropod endopod article 1 twice length of articles 2 and 3 together. *Adult male* unknown.

Depth. 390 m.

Distribution. Arafura Sea, 7°34'S, 132°44'E.

Remarks. *Platytyphlops arafurensis* is most similar to *P. lowryi*, but can be differentiated by the uropod endopod setation; in *P. arafurensis* article 1 of the uropod endopod has 20 setae whereas in *P. lowryi* there are at least 28 setae on the article 1 of the endopod. The ridge patterns of the carapace are similar, although *P. lowryi* has a dorsal crest down the pereonites, while this crest is not present in *P. arafurensis*.

***Platytyphlops aspera* (Zimmer, 1907) n. comb.**

Paralamprops aspera Zimmer, 1907: 373; 1913: 457–458, pl. 6 figs 52–55.

Paralamprops asper.—Corbera, 2000: 20, fig. 10b.—Petrescu & Wittmann, 2003: 586–588, fig. 200–220.

Type material. Syntypes: 2 ZMB 18339, ovigerous females. Winter Station, Antarctica, 66°21'S, 89°38'E.

Diagnosis. Carapace with 3 pairs lateral ridges, marginal carina toothed. Telson 1.0 uropod peduncles, with 3 terminal setae. Uropod peduncles with 13 medial setae. *Adult male* unknown.

Depth. 385–649 m.

Distribution. Antarctica, 66–73°S, 22°W–89°E.

Remarks. Redescribed in Petrescu & Wittmann (2003), with maxillule palp with two setae.

***Platytyphlops bamberi* n. sp.**

(Figs 54–55)

Type material. Holotype: subadult female, NIWA 120051, 44°30'S, 174°18.6'E, 760 m, NZOI station S147, Chatham Rise, New Zealand. Paratype: subadult female, dissected, NIWA 120052, collected with holotype.

Diagnosis. Carapace without lateral ridges, thickly covered in large spines dorsal of marginal carina, with sparser smaller spines ventral of marginal carina, marginal carina dentate, ridge absent on pseudorostrum; eyelobe without lenses or timidities, with medial line of spines. Antennule article 1 not expanded; accessory flagellum equal to main flagellum length. Telson 0.7 uropod peduncles, with 3 terminal setae, central seta short. Uropod peduncles with 15 medial setae. *Adult male* unknown.

Description. Holotype subadult female, NIWA 120051; paratype subadult female, NIWA 120052.

Subadult female, 11.8 mm. Carapace thickly covered with spines dorsal of marginal carina, with smaller sparser spines ventral of marginal carina, posterior dorsolateral expansion, sharp dorsal crest on frontal lobe continuing onto eyelobe; pseudorostral lobes 0.3 carapace length; eyelobe 0.07 carapace length, with medial line of spines; carapace 1.4 length of pereonites; pereonites with spines dorsally; pleonites with dorsal small spines (Fig. 54A–B).

Paratype subadult female, NIWA 120052.

Antennule peduncle article 1 subequal to articles 2 and 3 together, margin with spines, with plumose setae; article 2 1.3 article 3 length, without spines, with plumose setae; article 3 with plumose setae; main flagellum of 7 articles, shorter than peduncle, with simple setae and 2 small aesthetascs terminally; accessory flagellum of 4 articles, with simple setae (Fig. 54C).

Antenna of 4 articles; article 1 without spines, unarmed; article 2 with 6 pappose and 1 simple setae; article 3 with 2 pappose setae; article 4 2.0 length of article 3, with 2 small simple setae terminally (Fig. 54D).

Mandible navicular, with 11 microserrate setae medially (Fig. 54E).

Maxillule with 2 endites; outer endite with 8 stout setae; inner endite with 3 simple and 1 tricuspid setae; palp with 2 setae (Fig. 54F).

Maxilla not seen.

Maxilliped 1 basis produced distally as broad lobe, medial margin with 3 pappose and 2 hook setae, 1 stout seta distally; ischium absent; merus with 2 plumose setae laterally; carpus 1.3 merus length, with plumose and comb setae medially, plumose seta laterally; propodus 0.8 carpus length, with plumose setae; dactylus 0.6 propodus length, with simple setae (Fig. 54G).

Maxilliped 2 basis equal to all other articles together, medial margin with 4 pappose setae, distal margin with 2 pappose and 3 plumose setae; ischium unarmed; merus 3.0 ischium length, with plumose seta laterally; carpus 2.5 merus length, with plumose setae medially, plumose seta laterally; propodus 0.7 carpus length, with plumose and simple setae; dactylus 0.5 propodus length, with simple setae terminally (Fig. 55A).

Maxilliped 3 basis 0.8 all other articles together, medial margin with plumose setae, lateral margin with simple setae, with 4 plumose setae at distal corner; ischium 0.06 basis length, unarmed; merus 2.7 ischium length, with plumose seta medially, 2 plumose setae laterally; carpus 3.1 merus length, with sparsely plumose setae medially, 2 plumose setae laterally; propodus 0.7 carpus length, with sparsely plumose setae medially, plumose setae laterally; dactylus 0.4 propodus length, with 4 simple setae terminally; exopod equal to basis length, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 55B).

Pereopod 1 broken, basis with plumose setae on margins; exopod 0.7 basis length, basal article with 5 plumose setae, flagellum with plumo-annulate setae (Fig. 55C).

Pereopod 2 basis shorter than all other articles together, with 12 plumose setae; ischium 0.06 basis length, unarmed; merus 3.0 ischium length, with 1 stout microserrate, 1 plumose and 2 simple setae; carpus 3.2 merus length, with 13 microserrate and 1 plumose setae; propodus 0.2 carpus length, with simple seta; dactylus broken, with simple setae; exopod 0.6 basis length, basal article with plumose seta, flagellum with plumo-annulate setae (Fig. 55D).



FIGURE 54. *Platytyphlops bamberi* n. sp. Holotype subadult female NIWA 120051, A, side view. Paratype subadult female NIWA 120052, B, dorsal view; C, antennule; D, antenna; E, mandible; F, maxillule; G, maxilliped 1. Scale bars full body 1.0 mm, all others 0.1 mm.

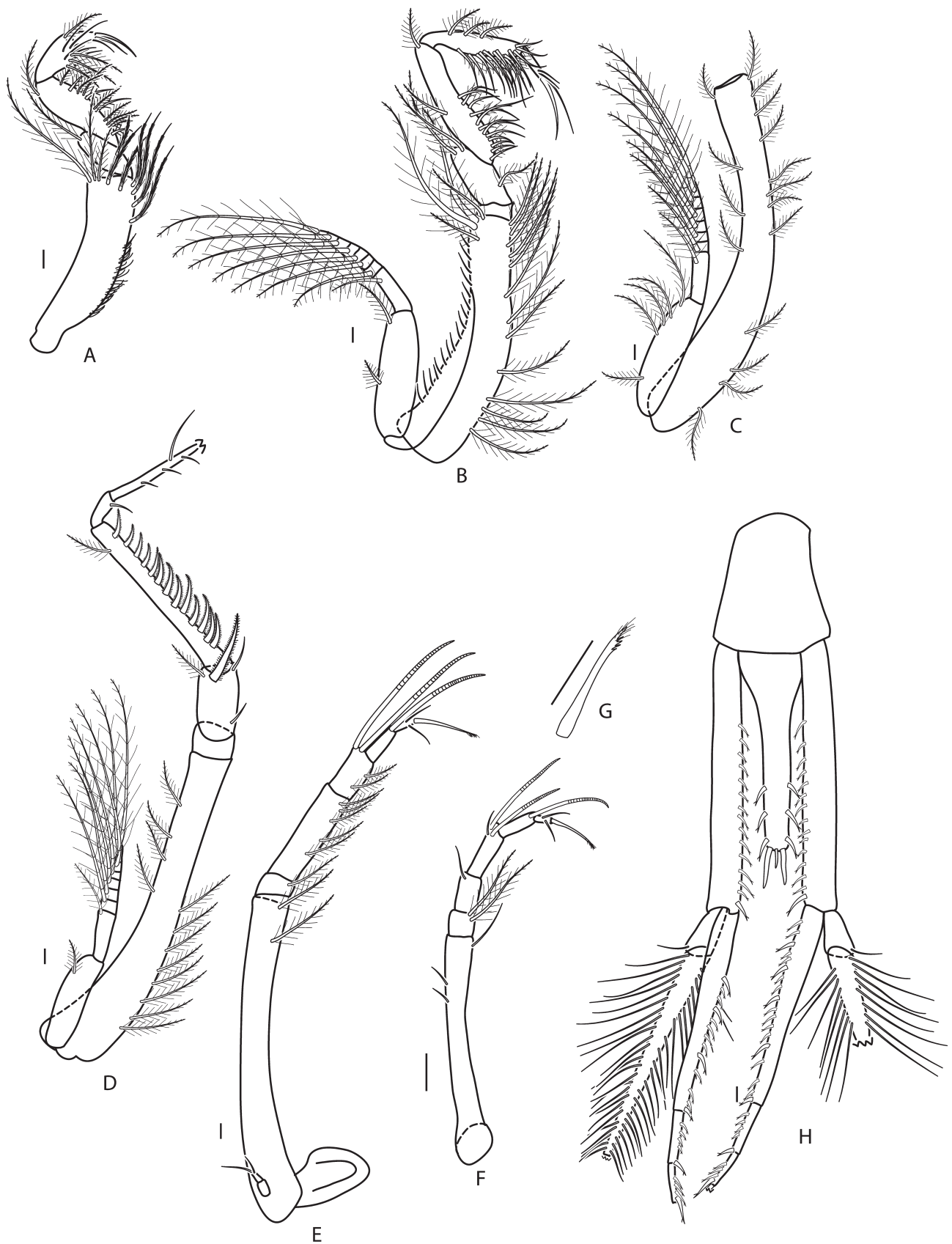


FIGURE 55. *Platytyphlops bamberi* n. sp. Paratype subadult female NIWA 120052, A, maxilliped 2; B, maxilliped 3; C, basis pereopod 1; D, pereopod 2; E, pereopod 3; F, pereopod 5; G, terminal seta of pereopod 5; H, telson and uropods. Scale bars 0.1 mm.

Pereopod 3 basis 1.5 all other articles together, with 2 plumose setae; ischium 0.06 basis length, with plumose seta; merus 4.8 ischium length, with 5 plumose setae; carpus 0.5 merus length, with 2 plumose and 2 annulate setae; propodus 0.8 carpus length, with annulate seta; dactylus 0.7 propodus length, with 2 simple and 1 stout micro serrate setae terminally; exopod rudimentary, 0.09 basis length, of 2 articles with 2 simple setae (Fig. 55E).

Pereopod 4 broken, not figured.

Pereopod 5 basis 1.3 all other articles together, with 3 simple setae; ischium 0.1 basis length, with 2 plumose setae; merus 1.6 ischium length, with simple seta; carpus 1.3 merus length, with 1 simple and 2 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.6 propodus length, with 2 simple and 1 stout micro serrate setae terminally (Fig. 55F–G).

Telson 1.4 length of pleonite 6, with 3 lateral setae with single subterminal setule, 3 simple terminal setae, central seta short, outer pair more than twice length of central seta (Fig. 55H).

Uropod peduncles 2.0 pleonite 6 length, 1.4 telson length, with 15 medial setae with single subterminal setule. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 4.1 length of article 2, with 13–17 medial setae with single subterminal setule; article 2 with 5 medial setae with single subterminal setule; article 3 0.8 article 2 length, with 4 medial setae with single subterminal setule. Uropod exopod of 2 articles, 0.9 length of endopod; article 1 0.2 length article 2, with simple seta; article 2 with many long slender simple setae (Fig. 55H).

Etymology. The new species is named in honor of the late Roger Bamber, who was an excellent and productive taxonomist on the Tanaidacea and other peracarid groups.

Depth. 760 m.

Distribution. Chatham Rise, New Zealand, 44°30'S, 174°18.6'E.

Remarks. *Platytyphlops bamberi*, found in New Zealand waters, is most similar to *P. echinatus*, from Australian waters, but can be distinguished by the presence of spines ventral of the marginal carina and the unequal terminal setae on the telson; *P. echinatus* has no spines on the carapace ventral of the marginal carina, and the telson terminal setae are subequal in length.

***Platytyphlops carpuserratus* (Mühlenhardt-Siegel, 2005) n. comb.**

Paralamprops carpuserratus Mühlenhardt-Siegel, 2005: 119–122, figs 4–5.

Type material. Holotype: ZMH K 40,420, subadult female (broken). Paratype: ZMH K 40,421, adult male, damaged. Angola Basin, 22°20.0'–22°20.20'S, 3°18.3'–3°18.40'E. Not seen.

Diagnosis. Carapace without lateral ridges, marginal carina of blunt teeth, no ridges on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.6 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 shorter than length of articles 2 and 3 together. *Adult male* with long antennal flagellum.

Depth. 5125–5395 m.

Distribution. Angola Basin, 18°18'–22°20'S, 3°18'–4°41'E.

Remarks. Only two specimens of this species are known. This species is most similar to *Platytyphlops corolliferus*, but can be differentiated by the teeth in the marginal carina being of equal size, while in *A. corolliferus* the teeth decrease in size posteriorly.

***Platytyphlops cherkii* (Reyss, 1978a) n. comb.**

Paralamprops cherkii Reyss, 1978a: 18–20, fig. 10.

Type material. Deposition unknown. 53°44.9'N, 17°51.8'W. Not seen.

Diagnosis. Carapace without lateral ridges, marginal carina entire, ridges absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.8 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, central seta longest. Uropod endopod article 1 1.3 length of articles 2 and 3 together. *Adult male* unknown.

Depth. 2450 m.

Distribution. Northeast Atlantic, 53°44.9'N, 17°51.8'W.

Remarks. *Platytyphlops cherkii* is most similar to *P. orbicularis*; however, in *P. orbicularis* the uropod peduncle has more than 10 setae medially, while in *P. cherkii* the uropod peduncle has only 5 setae medially.

***Platytyphlops corolliferus* (Gamô, 1984) n. comb.**

Paralamprops corollifera Gamô, 1984: 21–25, fig. 1–2.

Type material. Holotype: NSMT, subadult male. East of Japan Trench, 38°33.9–35.5'N, 145°15.1–15.7'E. Not seen.

Diagnosis. Carapace without lateral ridges, marginal carina dentate, faint ridge present on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.6 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 equal to length of articles 2 and 3 together. *Adult male* unknown.

Depth. 5349–5368 m.

Distribution. East of Japan Trench, 38°33.9'–35.5'N, 145°15.1–15.7'E.

Remarks. Only the subadult male holotype is known. The most similar species is *Platytyphlops carpusserratus*. The two species can be distinguished by the teeth of the marginal carina. In *P. corolliferus* the teeth decrease in size posteriorly, while in *P. carpusserratus* the teeth are equal in size throughout the carina.

***Platytyphlops crosnieri* (Corbera, 2006) n. comb.**

Paralamprops crosnieri Corbera, 2006: 156–159, figs 8–10.

Type material. Holotype: MNHN-Cu1005, adult female. Allotype: MNHN-Cu1006, adult male (broken). Paratypes: MNHN-Cu1007, adult male; MNHN-Cu1008, 5 adult females, 11 preparatory females, 4 preparatory males, 2 damaged individuals. New Caledonia, 22°47.3'S, 167°14.3'E.

Diagnosis. Carapace with 3 pairs lateral ridges, marginal carina entire, ridge absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.8 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 1.1 length of articles 2 and 3 together. *Adult male* with long antennal flagellum.

Depth. 440 m.

Distribution. New Caledonia, 22°47.3'S, 167°14.3'E.

Remarks. The most similar species is *Platytyphlops rossi*, which has a distinct ridge on the pseudorostrum, and *P. crosnieri* has no ridge on the pseudorostrum.

***Platytyphlops echinatus* n. sp.**

(Figs 56–58)

Type material. Holotype: subadult female AM P101490, 33°40'S, 152°6'E, 1115 m, off Sydney, Australia, 19 December 1985. Paratypes: subadult female AM P101491, subadult female AM P101492, subadult male AM P101500, collected with holotype.

Diagnosis. Carapace without lateral ridges, covered in spines dorsal of marginal carina, marginal carina dentate, ridge absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.6 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod broken. *Adult male* unknown.

Description. Holotype subadult female, AM P101490.

Subadult female, 14.0 mm. Carapace covered with spines dorsal to marginal carina, no spines ventral of carina, posterior dorsolateral expansion, with anterodorsal ridge; pseudorostral lobes 0.3 carapace length; eyelobe 0.07 carapace length, no lenses; carapace 2.5 length of pereonites; pereonites with spines dorsally (Fig. 56A–B).

Paratype subadult female, AM P101491.

Antennule peduncle article 1 longer than articles 2 and 3 together, margins with spines, unarmed; article 2 1.1 article 3 length, margin with 2 spines, 1 simple seta; article 3 with 4 simple setae; main flagellum of 5 articles, subequal to peduncle, with simple setae and 2 aesthetascs terminally; accessory flagellum of 3 articles, extending to anterior border of main flagellum article 3, with simple and plumose setae (Fig. 56C).

Antenna of 4 articles; article 1 with 2 spines on margin, 2 pappose setae; article 2 with 1 pappose seta; article 3 with 1 spine and 1 pappose seta; article 4 longer than articles 1–3 together, terminal seta broken (Fig. 56D).

Mandible navicular, with 16 setae medially (Fig. 56E).

Maxillule with 2 endites; outer endite with 9 stout setae; inner endite with 2 microserrate and 2 simple setae; palp with 2 setae (Fig. 56F).

Maxilla with 3 endites; broad endite distal margin with pappose, simple, and microserrate setae, medial margin with row of 33 setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 5 microserrate setae terminally; both narrow endites extend just past distal margin of broad endite (Fig. 56G).

Maxilliped 1 basis produced distally as broad lobe, distal margin with 2 stout setae, lobe margins with 2 pappose setae and row of 10 simple setae; ischium absent; merus with 1 pappose seta laterally; carpus medial face with simple and comb setae, 1 pappose seta laterally; propodus with simple and plumose setae distally; dactylus with 3 simple setae terminally (Fig. 56H).

Paratype subadult female, AM P101491.

Maxilliped 2 basis as long as next 4 articles together, medial margin with 3 pappose setae, distal corner with 3 pappose setae; ischium unarmed; merus 2.0 length of ischium, with 1 pappose seta medially, 1 pappose seta distally; carpus 1.5 merus length, with plumose and simple setae medially, 1 plumose seta distally; propodus 0.8 carpus length, with plumose and simple setae; dactylus 0.7 propodus length, with 2 simple setae (Fig. 56I).

Maxilliped 3 to pereopod 2 broken, not illustrated.

Pereopod 3 basis 2.2 all other articles together, with 8 plumose setae; ischium 0.05 basis length, with 1 simple seta; merus 5.3 length of ischium, with 1 simple seta; carpus 0.4 merus length, with 1 simple and 2 annulate setae; propodus 0.7 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 1 simple seta; exopod rudimentary, 0.08 basis length, 2 articles, with simple setae (Fig. 4A).

Pereopod 4 broken, not illustrated.

Paratype subadult female, AM P101491.

Pereopod 5 basis 1.4 all other articles together, unarmed; ischium 0.1 basis, unarmed; merus 1.2 ischium, unarmed; carpus 1.2 merus, unarmed; propodus 1.2 carpus, unarmed; dactylus 0.4 propodus, with 5 simple setae (Fig. 57B).

Paratype subadult female, AM P101492.

Telson 1.3 length of pleonite 6, with 2 lateral simple setae, 3 terminal simple setae, shorter than terminal setae (Fig. 57C).

Uropod peduncles 2.0 length of pleonite 6, with 12–15 medial setae with single subterminal setule (Fig. 57C). Uropod rami broken.

Paratype subadult male, AM P101500.

Antennule peduncle article 1 1.1 length of article 2 and 3 together, with spines and 9 plumose setae; article 2 0.6 article 1 length, with 13 plumose setae; article 3 0.6 article 2 length, with 6 simple and 4 plumose setae; main flagellum of 6 articles, longer than peduncle, with simple setae, 2 aesthetascs terminally, first article expanded, suggesting adult male will have group of setae on the first article; accessory flagellum of 3 articles, extending to anterior border of main flagellum article 4, with simple setae (Fig. 57D).

Antenna peduncle of 5 articles, flagellum with many short articles, no setae present (Fig. 57E).

Maxilliped 3 basis 0.8 all other articles together, medial margin serrate distally with 11 pappose setae, not expanded distally, with 2 plumose setae at distal corner; ischium 0.08 basis length, with 1 plumose seta; merus 2.4 ischium length, medial margin serrate with 2 plumose setae, 3 plumose setae distally; carpus 2.5 merus length, with 8 medial plumose setae, 4 plumose setae laterally; propodus 0.7 carpus length, with 9 plumose setae medially, 5 plumose setae laterally; dactylus 0.5 propodus length, with 3 simple setae terminally; exopod as long as basis, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 57F).

Pereopod 1 broken, not illustrated.

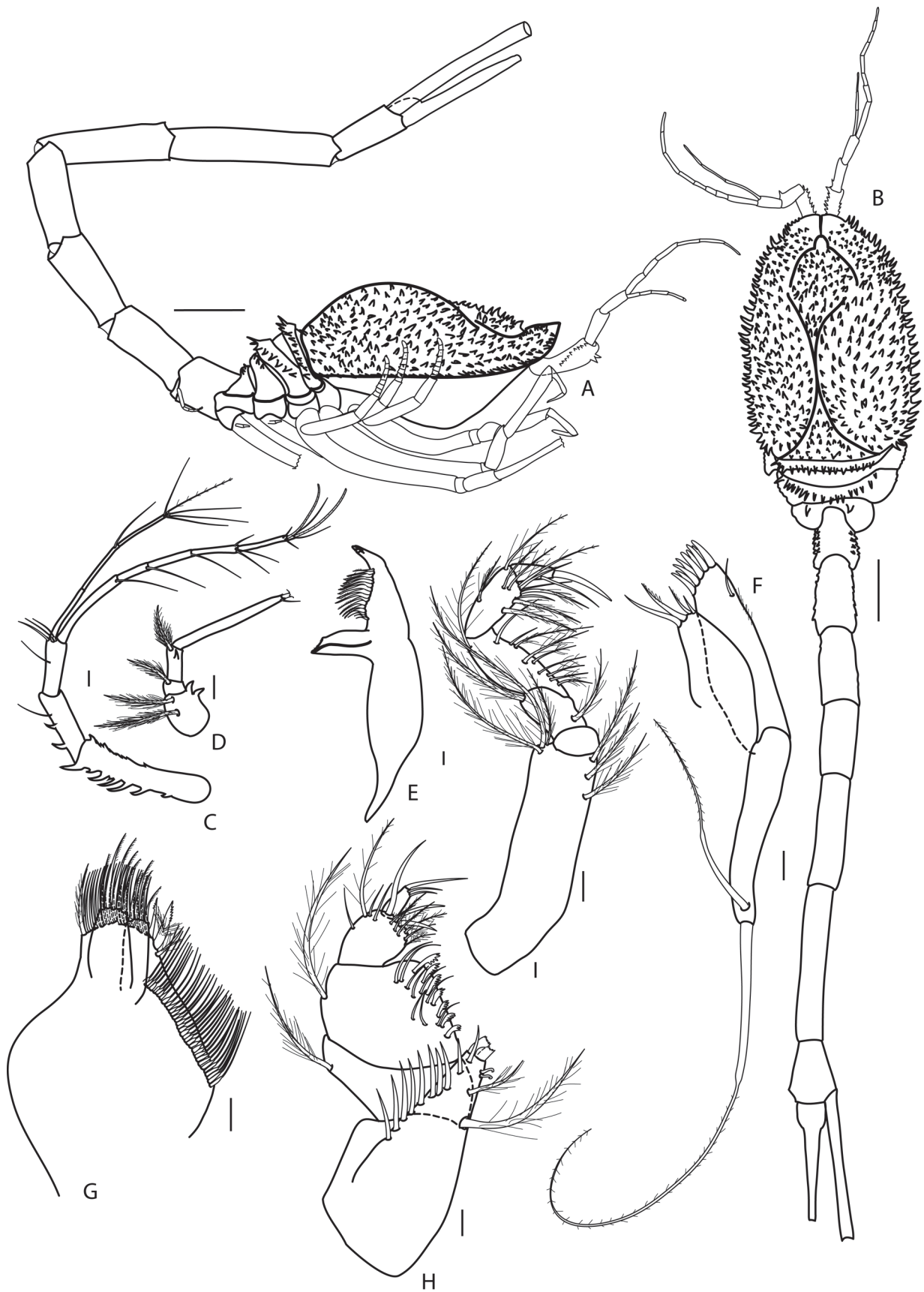


FIGURE 56. *Platytyphlops echinatus* n. sp. Holotype subadult female AM P101490, A, side view, B, dorsal view. Paratype subadult female AM P101491, C, antennule; D, antenna; E, mandible; F, maxillule; G, maxilla; H, maxilliped 1. Paratype subadult female AM P101492, I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

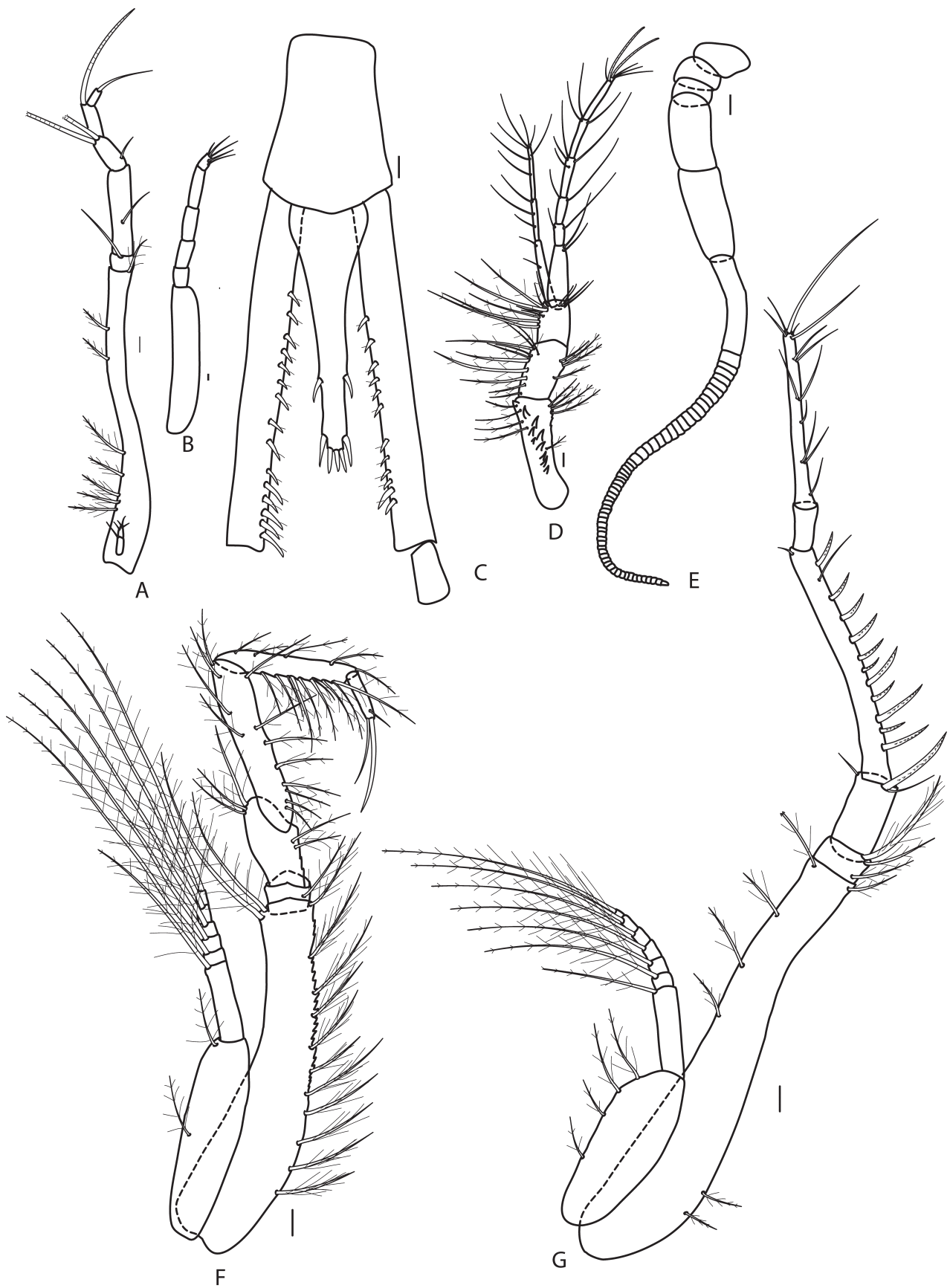


FIGURE 57. *Platytyphlops echinatus* n. sp. Paratype subadult female AM P101491 A, pereopod 4; C, telson and uropods. Paratype subadult female AM P101492, B, pereopod 5. Subadult male AM P101500, D antennule; E, antenna; F, maxilliped 3; G, pereopod 2. Scale bars 0.1 mm.

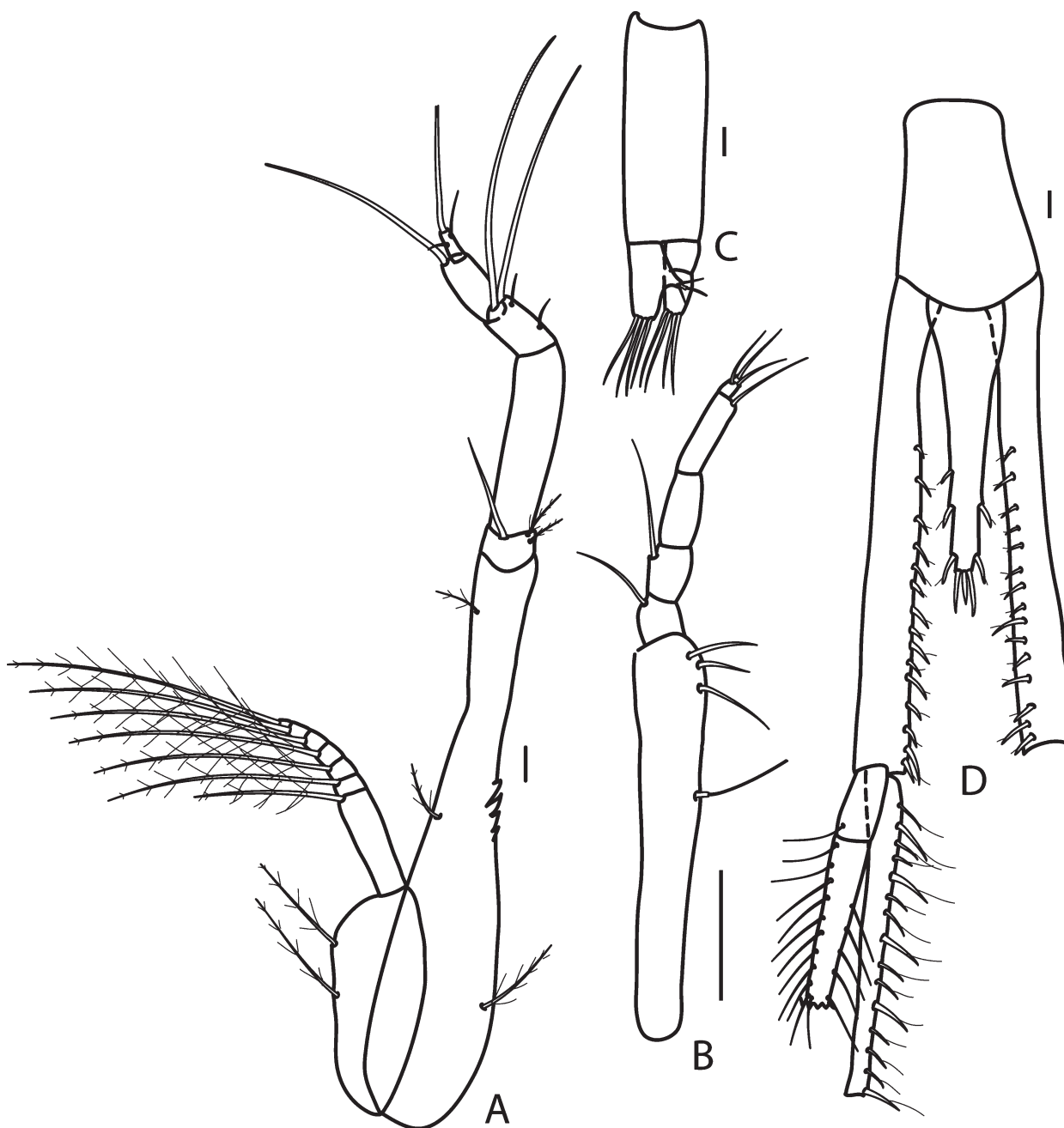


FIGURE 58. *Platytyphlops echinatus*. Paratype subadult male AM P101500 A, pereopod 3; B, pereopod 5; C, pleopod 1; D, telson and uropods. Scale bars 0.1 mm.

Pereopod 2 basis equal to next 4 articles together, with 5 plumose setae; ischium 0.06 basis length, with 3 plumose setae; merus 2.6 ischium length, with 2 simple and 1 micro serrate setae; carpus 3.4 merus length, with 11 micro serrate setae, 1 simple seta; propodus 0.2 carpus length, unarmed; dactylus 4.0 length of propodus, with 12 simple setae; exopod shorter than basis, basal article with 4 plumose setae, flagellum with plumo-annulate setae (Fig. 57G).

Pereopod 3 basis 1.6 all other articles together, margin partially serrate, with 4 plumose setae; ischium 0.07 basis length, with 1 simple and 2 plumose setae; merus 4.5 ischium length, unarmed; carpus 0.3 merus length, with 2 simple and 2 annulate setae; propodus 0.8 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod shorter than basis, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 58A).

Pereopod 4 broken, not illustrated.

Pereopod 5 basis 1.5 all other articles together, with 1 pedunculate and 3 simple setae; ischium 0.1 basis length, with 1 simple seta; merus 1.2 ischium length, with 1 simple seta; carpus 1.6 merus length, unarmed; propodus equal to carpus, with 1 simple seta; dactylus 0.25 propodus length, with 3 simple setae terminally (Fig. 58B).

Pleopod 1 (Fig. 58C).

Telson 1.3 length of pleonite 6, with 2 lateral setae with single subterminal setule, 3 terminal setae (Fig. 58D)

Uropod peduncles 2.3 length of pleonite 6, with 15 medial setae with single subterminal setule. Uropod rami broken, exopod article 1 distinctly much less than 0.5 article 2 length (Fig. 58D).

Etymology. The species is named *echinatus*, in reference to the spine covered carapace and pereonites.

Depth. 1115 m.

Distribution. 33°40'S, 152°6'E.

Remarks. *Platytyphlops echinatus* is most similar to *P. bamberi*, *P. petrescui* and *P. tuberculatus*. *Platytyphlops bamberi* is easily distinguished by the presence of spines on the carapace ventral of the marginal carina, and unequal terminal setae of the telson; in *P. echinatus* there are no spines on the carapace ventral of the marginal carina, and the telson terminal setae are subequal in length. *Platytyphlops tuberculatus* is easily distinguished by the expanded article 1 of the antennule; in *P. echinatus* article 1 of the antennule is the same width as article 2. *Platytyphlops petrescui* can be distinguished by the carapace, pleonites and pereonites covered with blunt tubercles, setose antennule, equal flagella of the antennule, telson equal to the uropod peduncles, and six pairs of lateral setae on the telson; in comparison, in *P. echinatus* the dorsal surfaces of the carapace and pereonites are covered with sharp spines, the antennule has only two setae, the accessory flagellum is distinctly shorter than the main flagellum, the telson is shorter than the uropod peduncles, and there are only two pairs of lateral setae on the telson.

***Platytyphlops girardi* (Reyss, 1978a) n. comb.**

Paralamprops girardi Reyss, 1978a: 15–18, fig. 8A–E.

Type material. Deposition unknown. Not seen.

Other material. Four subadult females, 1 adult male, MNHN-CU303, INCAL WS04, 2505 m; 1 ovigerous female, 2 subadult females, MNHN-CU304, INCAL WS05, 4805 m; 1 subadult female, MNHN-CU307, INCAL DS06, 2494 m.

Diagnosis. Carapace without lateral ridges, marginal carina bluntly dentate, ridge absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum subequal to main flagellum. Telson shorter than uropod peduncles, with 3 pairs lateral setae, with 3 terminal setae, central seta longest. Uropod peduncle with 3 medial setae. Uropod endopod article 1 1.0 length of articles 2 and 3 together. *Adult male* carapace identical to female. Uropod peduncle with 18 medial setae. Telson with 2 pairs lateral setae.

Depth. 2494–4805 m.

Distribution. North Atlantic, Gulf of Gascogne, 54°21.6'N, 27°10.2'W; tropical Atlantic, 00°03'–46'S, 27°48'–29°28'W and 7°58'S, 34°17'W.

Remarks. *Platytyphlops girardi* is most similar to *P. semiornatus*, but can be distinguished by the proportions of the carapace. In *P. girardi* the carapace is as wide as it is long, while in *P. semiornatus* the carapace is longer than wide.

***Platytyphlops grimaldii* (Fage, 1929) n. comb.**

Paralamprops grimaldii Fage, 1929: 22–24, pl. 2, fig 46–55.

Type material. Holotype: MNHN, male. Azores, 40°05'N, 27°27'45"W. Not seen.

Diagnosis. Carapace with 1 pair sinuate lateral ridges, marginal carina entire, ridge present on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 1.0 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 2.0 length of articles 2 and 3 together. *Adult male* antennule setose, with cluster of aesthetascs on first article of main

flagellum. Antennal flagellum extending past posterior border of pleonite 6.

Depth. 587–1850 m.

Distribution. Azores, North Atlantic, 40°05'N, 27°27'45"W; Tropical Atlantic, 7°58'–8°3'S, 34°17'–23'W.

Remarks. *Platytyphlops grimaldii* is most similar to *P. peringueyi*, but can be distinguished by the pattern of ridges on the carapace. In *P. peringueyi* the posterior dorsal pair of ridges are produced as a blunt tooth, while in *P. grimaldii* the posterior dorsal pair of ridges are half the length of the carapace, and not produced as a blunt tooth. In addition, *P. peringueyi* is known from South Africa, while *P. grimaldii* is known from the North Atlantic.

***Platytyphlops latus* (Hale, 1946) n. comb.**

Hemilamprops lata Hale, 1946: 179–183, figs 1–2.

Type material. Holotype: SAMA 2802, female. Allotype: SAMA 2804, male. 11 miles off Eden, New South Wales, Australia.

Diagnosis. Carapace with 1 pair dorsal partial ridges, many incomplete ridges, marginal carina entire, ridge present on pseudorostrum; eyelobe with lenses or tumidities; pseudorostrum excavate. Antennule article 1 not expanded; accessory flagellum equal to main flagellum. Telson 0.8 uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 1.1 length of articles 2 and 3 together. *Adult male* carapace less sculptured than in female, antenna extending to posterior border of pleonite 5.

Depth. 50–120 m.

Distribution. Australia: New South Wales, Tasmania.

Remarks. This species is similar to *Platytyphlops mawsoni*, but can be differentiated by size, being much smaller than *P. mawsoni*, and having an excavate pseudorostrum in dorsal view, while in *P. mawsoni* the pseudorostrum projects anteriorly and comes to a point. The species is transferred to *Platytyphlops* because of the presence of the marginal carina on the carapace, the presence of two setae on the maxillule palp, and the proportions of the uropods, with uropod endopod article 1 longer than articles 2 and 3 together, and the uropod exopod with the first article much less than half the length of article 2. The combination of the carapace morphology and uropod exopod proportions mean that this species does not fit within *Hemilamprops*.

***Platytyphlops ledoyeri* (Reyss, 1978a) n. comb.**

Paralamprops ledoyeri Reyss, 1978a: 12–15, figs 6–7.

Type material. Syntypes: MNHN. Bermuda Transect, North Atlantic, 36°23'N, 67°58'W. Not seen.

Diagnosis. Carapace with 1 pair lateral ridges, marginal carina entire, ridge absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.8 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, central seta longest. Uropod endopod article 1 1.1 length of articles 2 and 3 together. *Adult male* antennule accessory flagellum and main flagellum equal in length. Antennal flagellum extending to posterior border of pleonite 6.

Depth. 4680–4749 m.

Distribution. Bermuda Transect, North Atlantic, 36°23'N, 67°58'W.

Remarks. *Platytyphlops ledoyeri* is unique within the genus in having a single ridge dorsal and parallel to the marginal carina, and a short pair of dorso-medial ridges posteriorly. The rest of the species in the genus can be divided into those having only the marginal carina, and those having many ridges dorsal of the marginal carina.

***Platytyphlops lowryi* n. sp.**

(Figs 59–62)

Type material. Holotype: ovigerous female AM P101493, 33°43'S, 151°54'E, 466 m, north-east of Long Reef, New South Wales, Australia, collected by FRV "Kapala", 19 December 1985.

Paratypes: female AM P101494, female AM P101495, adult male AM P101496, collected with holotype

Other material. 62 individuals, AM P101497, 33°43'S, 151°54'E, 466 m, north-east of Long Reef, New South Wales, Australia, collected by FRV "Kapala", 19 December 1985; 10 individuals, AM P101498, 33°43'S, 151°53'E, 518 m; 13 individuals, AM P101499, 33°42'S, 151°54'E, 466 m.

Diagnosis. Carapace with 3 pairs lateral ridges, marginal carina entire, ridge present on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 1.1 main flagellum. Telson shorter than uropod peduncles, center pair of lateral setae longer than other lateral setae, with 5 terminal setae, terminal setae equal. Uropod endopod article 1 2.0 length of articles 2 and 3 together. *Adult male* carapace dorsoventrally flattened relative to female, ridge pattern identical. Antennule with cluster of aesthetascs on article 1 of main flagellum, accessory flagellum 0.9 length of main flagellum. Antennal flagellum extending to posterior border of pereonite 2. Telson with 5 terminal setae, central seta longest, outermost pair longer than inner pair.

Description. Paratype subadult female AM P101494.

Subadult female, 7.5 mm. Carapace with marginal carina, large semi-circular carina posterior-dorsally, with short carina posteriorly, ventral to the dorsal carina, with long carina from anterior margin about 0.75 length of carapace, dorsal to marginal carina; pseudorostral lobes 0.4 carapace length; eyelobe 0.1 carapace length, no lenses; carapace 1.5 length of pereonites together (Fig. 59A–B).

Antennule peduncle article 1 1.2 article 2 length, unarmed; article 2 0.8 article 2, with many simple setae; article 3 0.6 article 2 length, with many simple setae; main flagellum of 4 articles, 0.6 peduncle length, with simple setae and 2 aesthetascs terminally; accessory flagellum of 3 articles, 1.1 length of main flagellum, with simple setae (Fig. 59C).

Antenna of 3 articles; article 1 with 2 plumose setae; article 2 with 1 spine and 1 simple setae; article 3 as long as article 1 and 2 together, with pedunculate setae terminally (Fig. 59D).

Mandible navicular, with row of 13 micro serrate setae, *lacinia mobilis* with 3 cusps (Fig. 59E).

Maxillule with 2 endites; outer endite with 9 stout setae; inner endite with 2 simple and 2 dentate setae; palp with 2 setae (Fig. 59F).

Maxilla with 3 endites; broad endite distal margin with pappose, simple and micro serrate setae, medial margin with row of simple setae; medial narrow endite with 4 micro serrate setae terminally; distal narrow endite with 5 micro serrate setae terminally; both narrow endites extend past distal margin of broad endite (Fig. 59G).

Maxilliped 1 basis produced distally as blunt lobe, distal margin of lobe with simple and stout setae, medial margin of lobe with pappose and hook setae; ischium absent; merus with 1 plumose seta laterally; carpus 1.9 merus length, medial face with simple and comb setae, with 1 plumose seta laterally; propodus 0.8 carpus length, with simple and pappose setae; dactylus 0.5 propodus length, with 4 simple setae terminally (Fig. 59H).

Maxilliped 2 basis as long as all other articles together, medial margin lined with simple setae, with plumose and pappose setae distally; ischium unarmed; merus 0.3 basis length, with 1 plumose seta laterally; carpus 1.4 merus length, with plumose setae medially and 1 plumose seta laterally; propodus 0.8 carpus length, with pappose and plumose setae; dactylus 0.5 propodus length, with 3 simple setae terminally (Fig. 59I).

Maxilliped 3 basis as long as next 4 articles together, medial and lateral margins with pappose setae, not expanded; ischium 0.6 basis length, unarmed; merus 3.3 ischium length, with 2 pappose setae medially and 3 plumose setae laterally; carpus 2.0 merus length, with plumose and simple setae medially; propodus 0.75 carpus length, with pappose setae medially, simple setae laterally; dactylus 0.5 propodus length, with simple setae terminally; exopod longer than basis, basal article with 1 pappose seta, flagellum with plumo-annulate setae (Fig. 60A).

Pereopod 1 broken.

Pereopod 2 basis longer than next 4 articles together, medial and lateral margins with pappose setae; ischium 0.05 basis length, with simple setae; merus 3.33 ischium length, with 2 micro serrate setae with single subterminal setule, 1 plumose seta; carpus 3.0 merus length, with 12 micro serrate setae with single subterminal setule, 1 plumose seta; propodus 0.2 carpus length, with 1 micro serrate seta with single subterminal setule, 1 simple seta; dactylus 4.2 propodus length, with 5 micro serrate setae with single subterminal setule, 6 simple setae; exopod shorter than basis, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 60B).

Pereopod 3 basis 2.0 all other articles together, with plumose setae; ischium 0.05 basis length, with 2 simple setae; merus 4.5 ischium length, unarmed; carpus 0.4 merus length, with 1 simple and 2 annulate setae; propodus 0.6 carpus length, with 1 annulate seta; dactylus equal to propodus length, with 2 simple setae terminally; exopod

rudimentary, 0.07 basis length, of 2 articles with simple setae (Fig. 60C).

Pereopod 4 basis 1.8 all other articles together, with plumose setae; ischium 0.07 basis length, with 2 simple setae; merus 3.0 ischium length, with 1 simple seta; carpus 0.7 merus length, with 1 simple and 2 annulate setae; propodus 0.5 carpus length, with 1 annulate; dactylus equal to propodus length, with 3 simple setae terminally; exopod rudimentary, 0.08 basis length, of 2 articles with simple setae (Fig. 60D).

Pereopod 5 basis 1.4 all other articles together, with pappose setae; ischium 0.09 basis length, with 1 simple seta; merus 2.0 ischium length, with 1 simple and 1 pappose setae; carpus 0.8 merus length, with 1 simple and 2 annulate setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.7 propodus length, with 1 simple seta terminally (Fig. 60E).

Telson 2.0 length of pleonite 6, with 6 or 8 lateral setae, 3–4 proximal short setae, 1 longer seta, then 2–3 distal short setae, 5 terminal setae (Fig. 60F).

Uropod peduncles 2.4 pleonite 6 length, 1.1 telson length, with 11–13 setae medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 2.0 article 2 and 3 together, with 19 simple with single subterminal setule setae medially; article 2 0.2 article 1 length, with 5 simple with single subterminal setule setae medially, 1 pedunculate and 1 complex pedunculate setae laterally; article 3 1.1 article 2 length, with 4 simple with single subterminal setule setae medially, 2 simple setae laterally, simple terminal seta 0.75 article 3 length. Uropod exopod 0.8 length of endopod; article 1 0.2 article 2 length, unarmed; article 2 with 8–12 simple with single subterminal setule setae laterally, 9–16 simple setae medially, simple terminal seta 0.7 article 2 length (Fig. 60F).

Paratype adult male, AM P101496.

Adult male, 5.8 mm. Carapace with marginal carina, large semi-circular carina posterior–dorsally, with short carina posteriorly, ventral to the dorsal carina, with long carina from anterior margin about 0.75 length of carapace, dorsal to marginal carina; pseudorostral lobes 0.3 carapace length; eyelobe 0.07 carapace length, no lenses; carapace 1.9 pereonites. Pereonites 3 and 4 produced as large lobe at the ventral midline (Fig. 61A–B).

Antennule peduncle article 1 equal to article 2 and 3 together, with 2 simple setae, corner serrate; article 2 0.7 article 1 length, with 8 simple setae; article 3 0.6 article 2, unarmed; main flagellum of 5 articles, article 1 expanded with many setae, with simple setae and 2 aesthetascs terminally; accessory flagellum of 3 articles, 0.9 main flagellum length, with simple setae (Fig. 61C).

Antenna peduncle of 5 articles; article 1 unarmed; article 2 with 1 plumose seta; article 2 unarmed; article 4 and 5 with ranks of setae on anterior face; flagellum with short articles, extending to pleonite 2 (Fig. 61D–E).

Maxilliped 3 basis longer than all other articles together, margins with pappose setae, not expanded; ischium 0.05 basis length, with 1 pappose seta; merus 2.3 ischium length, with 2 pappose setae medially and 2 pappose setae laterally; carpus 3.3 merus length, with simple and plumose setae medially, 2 simple setae laterally; propodus 0.5 carpus length, with plumose and simple setae medially, simple setae laterally; dactylus 0.75 propodus length, with 3 simple setae terminally; exopod shorter than basis, basal article with 1 pappose seta, flagellum with plumo-annulate setae (Fig. 61F).

Pereopod 1 basis longer than next 3 articles together, margins with plumose setae; ischium 0.9 basis length, with 1 plumose seta; merus 3.0 ischium length, with 5 simple setae; carpus 1.5 merus length, with 4 simple setae; propodus 1.1 carpus length, with 9 simple setae; dactylus 0.7 propodus length, with 9 simple setae, 2 simple setae terminally; exopod shorter than basis, basal article with 7 plumose setae, flagellum with plumo-annulate setae (Fig. 62A).

Pereopod 2 basis longer than next 4 articles together, margins with plumose setae, medial margin serrate distally; ischium 0.05 basis length, with 3 simple setae; merus 3.3 ischium length, with 1 simple seta; carpus 2.5 merus length, with 10 setae with single subterminal setule medially; propodus 0.3 carpus length, with 2 simple setae; dactylus 2.75 propodus length, with 8 simple setae, 1 simple seta terminally; exopod shorter than basis, basal article with 5 plumose setae, flagellum with plumo-annulate setae (Fig. 62B).

Pereopod 3 basis 1.8 all other articles together, margins with simple and plumose setae; ischium 0.04 basis length, with 2 simple setae; merus 6.0 ischium length, with 2 simple setae; carpus 0.7 merus length, with 1 simple and 2 annulate setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.75 propodus length, with 3 simple setae terminally; exopod shorter than basis, basal article with 4 plumose setae, flagellum with plumo-annulate setae (Fig. 62C).

Pereopod 4 basis 1.9 all other articles together, margins with plumose setae; ischium 0.04 basis length, with 2 simple setae; merus 5.5 ischium length, with 2 simple setae; carpus 0.7 merus length, with 1 simple and 2 annulate

setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.5 propodus length, with 3 simple setae terminally; exopod shorter than basis, basal article with 4 plumose setae, flagellum with plumo-annulate setae (Fig. 62D).

Pereopod 5 basis equal to all other articles together, with 5 simple setae; ischium 0.1 basis length, with 2 simple setae; merus 2.5 ischium length, with 1 simple seta; carpus 1.4 merus length, with 1 simple and 2 annulate setae; propodus 0.4 carpus length, with 1 annulate seta; dactylus 0.3 propodus length, with 3 simple setae terminally (Fig. 62E).

Pleopod 1 biramous, basal article serrate; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 62F).

Pleopod 2 biramous, basal article serrate, with plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 62G).

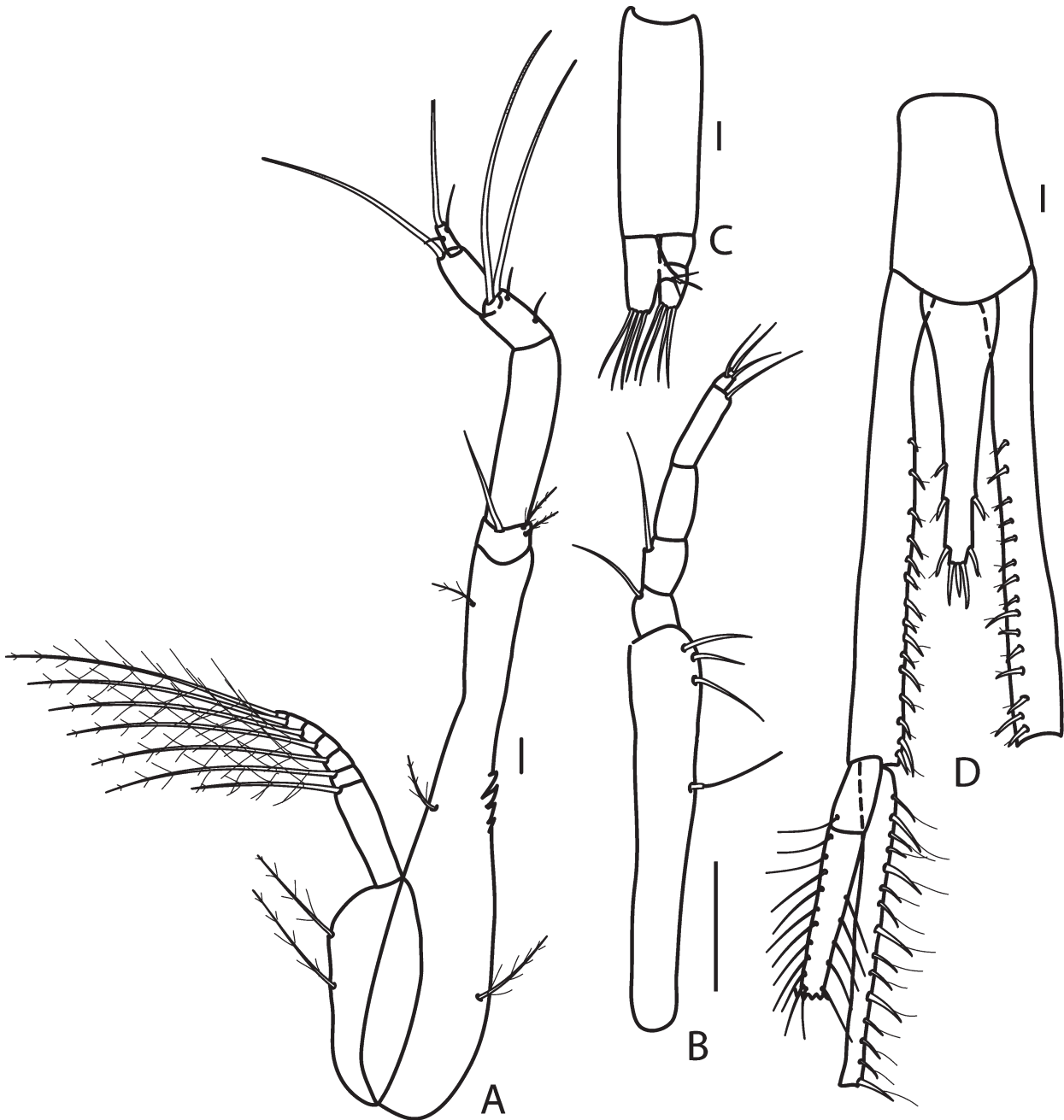


FIGURE 59. *Platytyphlops lowryi* n. sp. Holotype subadult female AM P101493, A, side view. Paratype subadult female AM P101494, B, dorsal view. Paratype subadult female AM P101495, C, antennule; B, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

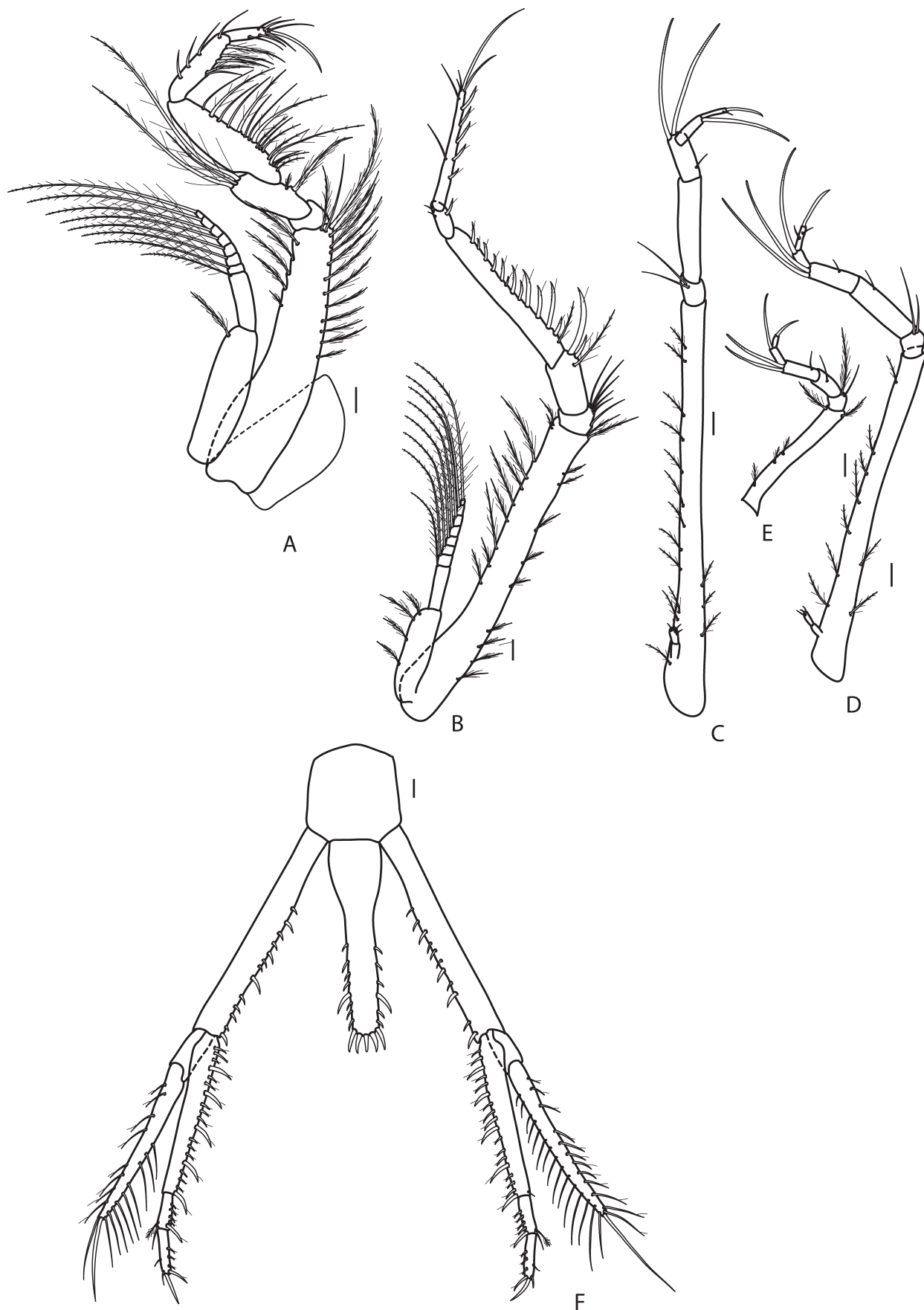


FIGURE 60. *Platytyphlops lowryi* n. sp. Paratype subadult female AM P101495, A, maxilliped 3; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars full body 1.0 mm, all others 0.1 mm.

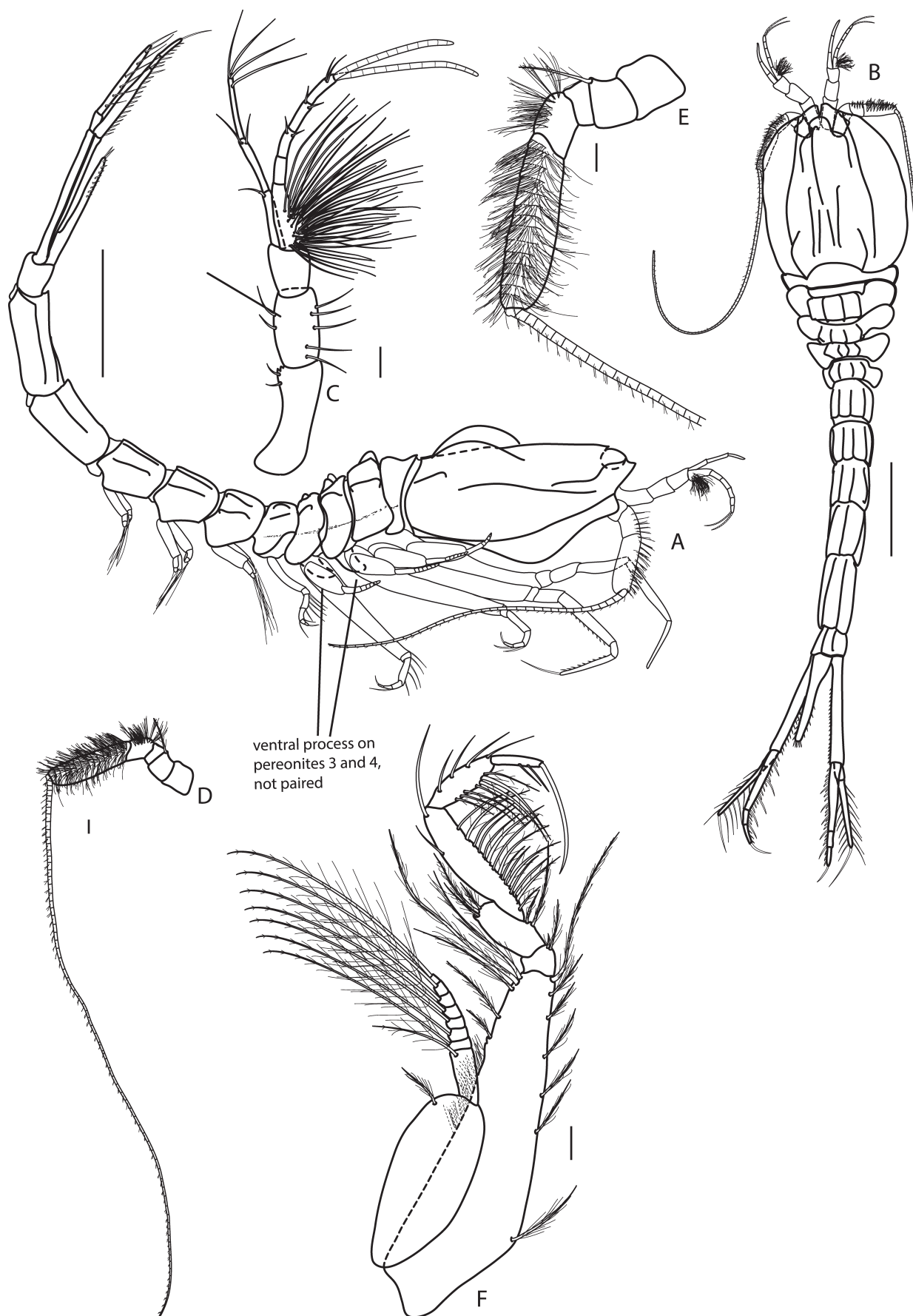


FIGURE 61. *Platytyphlops lowryi* n. sp. Paratype adult male AM P101496, A, side view; B, dorsal view; C, antennule; D, full antenna; E, detail of antennal peduncle; F, maxilliped 3. Scale bars full body 1.0 mm, all others 0.1 mm.

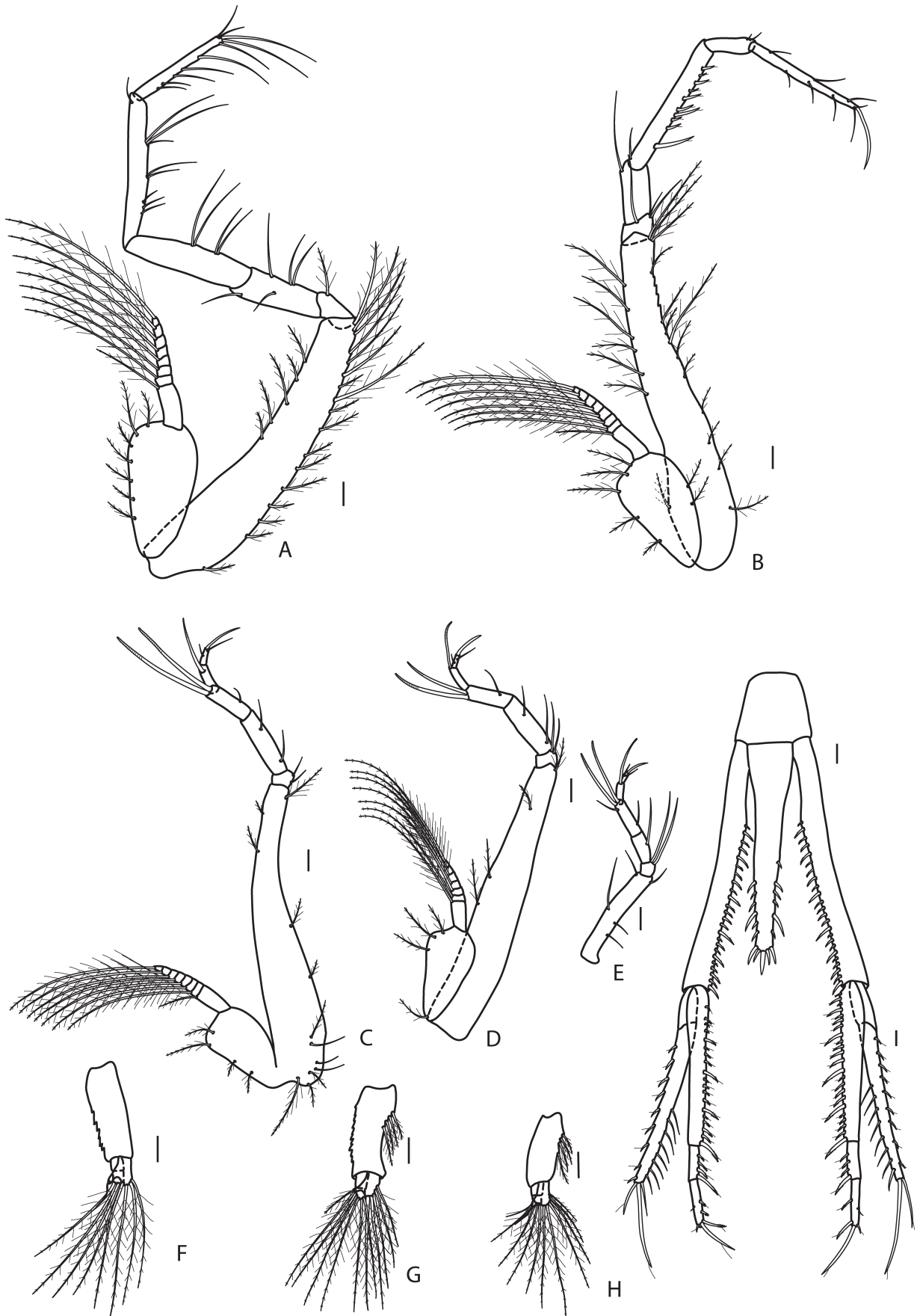


FIGURE 62. *Platytyphlops lowryi* n. sp. Paratype adult male AM P101496, A, pereopod 1; B, pereopod 2; C, pereopod 3, D, pereopod 4; E, pereopod 5; F, pleopod 1; G, pleopod 2; H, pleopod 3; I, telson and uropods. Scale bars 0.1 mm.

Pleopod 3 biramous, basal article with plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 62H).

Telson 3.0 length of pleonite 6, with 6 lateral setae, 3–4 short seta proximally, 1 longer seta, then 1–2 shorter distal setae, 5 terminal setae, central seta longest (Fig. 62I).

Uropod peduncles 3.5 pleonite 6 length, 1.2 telson length, with 24–25 microserrate setae with single subterminal setule medially. Uropod endopod of 3 articles, equal to peduncle length; article 1 2.0 length of articles 2 and 3 together, with 19–23 microserrate setae with single subterminal setule medially; article 2 0.2 article 1 length, with 4 microserrate setae with single subterminal setule medially; article 3 1.3 article 2 length, with 3 microserrate setae with single subterminal setule medially, 2 setae laterally, terminal microserrate setae with single subterminal setule, 1–1.5 article 3 length. Uropod exopod 0.8 length of endopod; article 1 0.2 length of article 2, unarmed; article 2 with 9 setae medially, 10 setae with single subterminal setule laterally, terminal seta with single subterminal setule, 0.5 article 2 length (Fig. 62I).

Etymology. The species is named for Jim Lowry, in honor of all his contributions to crustacean systematics and great hospitality.

Depth. 466–518 m.

Distribution. South-east Australian continental slope.

Remarks. *Platytyphlops lowryi* is most similar to *P. arafurensis*, but can be differentiated by having 28 or more setae medially on the uropod peduncle, compared to *P. arafurensis* with 20 setae medially on the uropod peduncle.

***Platytyphlops mawsoni* (Hale, 1937) n. comb.**

Hemilamprops mawsoni Hale, 1937: 44–46, figs 4a–b, 5a–l.

Paralamprops mawsoni.—Băcescu 1988: 24.—Corbera 2000: 20–22, fig. 11.—Petrescu & Wittmann 2003: 588–591, figs 6, 221–254.

Type material. Holotype: SAMA C2056, female. Off Enderby Land, Antarctica, 66°12'S, 49°37'E.

Diagnosis. Carapace with 2 pairs of broad lateral ridges, marginal carina entire, ridge present on pseudorostrum; eyelobe with lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.7 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 1.7 length of articles 2 and 3 together. *Adult male* carapace with 3 pairs of lateral ridges. Antennal peduncle articles 4 and 5 with setae around entire circumference of articles. Uropod endopod article 1 2.8 length of articles 2 and 3 together.

Depth. 240–630 m.

Distribution. Antarctic continental shelf, South Shetland Islands, Enderby, Weddell Sea, 66–76°S, 11–61°W.

Remarks. An ample redescription of the species, including the adult male, was provided by Petrescu & Wittman (2003), in addition to the excellent original description in Hale (1937) and the additional description in Corbera (2000). The most similar species is *P. latus*, which can be differentiated by body size and the pseudorostrum. *Platytyphlops latus* has an excavate pseudorostrum in dorsal view, while *P. mawsoni* has an anteriorly projecting pointed pseudorostrum in dorsal view. In addition, *P. latus* (7 mm ovigerous female) is much smaller than *P. mawsoni* (21 mm subadult female).

***Platytyphlops orbicularis* (Calman, 1905) n. comb.**

Platyaspis orbicularis Calman, 1905: 43, pl. 5 fig. 77–81.

Platytyphlops orbicularis.—Stebbing 1912: 144, 161.—Zimmer 1980: 18.

Platysympus orbicularis.—Hansen 1920: 52.—Reyss 1978a: 12.

Paralamprops orbicularis—Calman 1912: 631, 634, fig. 29–39.

Type material. Syntypes: NHM. 77 miles WNW of Achill Head, County Mayo, Ireland. Not seen.

Diagnosis. Carapace without lateral ridges, marginal carina entire, ridge absent on pseudorostrum; eyelobe

without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 1.0 main flagellum. Telson shorter than uropod peduncles, with 5 terminal setae, terminal setae equal. Uropod endopod article 1 1.7 length of articles 2 and 3 together. *Adult male* unknown.

Depth. 423–1739 m.

Distribution North Atlantic, east coast of USA, Faroes, Norway, Ireland.

Remarks. This is a distinctive species, with the carapace subrectangular in dorsal view and without sculpturing, and pereopod 5 being much shorter than the basis of pereopod 4, although similar in proportion to pereopods 3 and 4.

***Platytyphlops peringueyi* Stebbing, 1912**

Platytyphlops peringueyi Stebbing, 1912: 159–151, p. 58–59; 1913: 158, fig. 107

Paralamprops peringueyi.—Day 1978: 149–151, fig. 4A–M.

Type material. Syntypes: NHM, PF 17585, PF 17643, ovigerous female and young males. Off Cape Point, 34°48'S, 18°03'E. Not seen.

Diagnosis. Carapace with 2 pairs of lateral ridges, marginal carina entire, ridge absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 1.0 main flagellum. Pereopod 5 reduced, all articles past basis subequal. Telson shorter than uropod peduncles, with 3 terminal setae, central seta longest. Uropod endopod broken. *Adult male* carapace with same pattern of ridges as in female. Antennule with cluster of aesthetascs on first article of main flagellum. Pereopod 5 larger than in female, but all articles past basis subequal.

Depth. 369–1394 m.

Distribution. South Africa, 34°25'–48'S, 17°45'–18°03'E.

Remarks. *Platytyphlops peringueyi* is most similar to *P. grimaldii*, but can be differentiated from *P. grimaldii* and all other sculptured *Platytyphlops* by the pair of posterior dorsal ridges being short and produced as a blunt tooth. In all other *Platytyphlops* with many ridges on the carapace, the margin of the ridge in the posterior dorsal (sub median) position is entire or wavy, not produced as a tooth.

***Platytyphlops petrescui* n. sp.**

(Fig. 63–64)

Paralamprops serratocostatus.—Petrescu & Wittmann, 2003: 595.

Type material. Holotype: ovigerous female, GAM CUM 13931, 73°2.4'S, 28°28.1'W. Weddell Sea.

Other material. Subadult female, AM P66465, 33°2.6'S, 153°4.4'E, 3658 m.

Diagnosis. Carapace without lateral ridges, marginal carina anterior half weakly dentate, ridge absent on pseudorostrum; densely covered with blunt tubercles dorsal of the marginal carina; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 1.0 main flagellum. Pereopod 5 very short, but with proportions as in pereopods 3 and 4. Telson 1.0 uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 1.6 length of articles 2 and 3 together. *Adult male* unknown.

Description. Holotype ovigerous female, MGAB CUM 13931.

Ovigerous female, 12.6 mm. Carapace covered with club-shaped tubercles dorsal of marginal carina, posterior dorsolateral expansion, anterior crest with spines, with row of long setae parallel to anterior margin of carapace, all thoracic and pleonite segments with club shaped tubercles covering dorsal surface; pseudorostral lobes 0.32 carapace length; eyelobe 0.06 carapace length, no lenses; carapace 1.4 times length of all pereonites together (Fig. 63A–B).

Antennule peduncle article 1 1.3 length article 2 and 3 together, with spines, 3 simple and 6 plumose setae; article 2 0.5 article 1 length, with 2 simple and 12 plumose setae; article 3 0.6 article 2 length, with 9 plumose setae; main flagellum of 6 articles, 0.75 peduncle length, with simple setae and 2 aesthetascs terminally; accessory flagellum equal to main flagellum, of 2 articles, with simple setae (Fig. 63C).

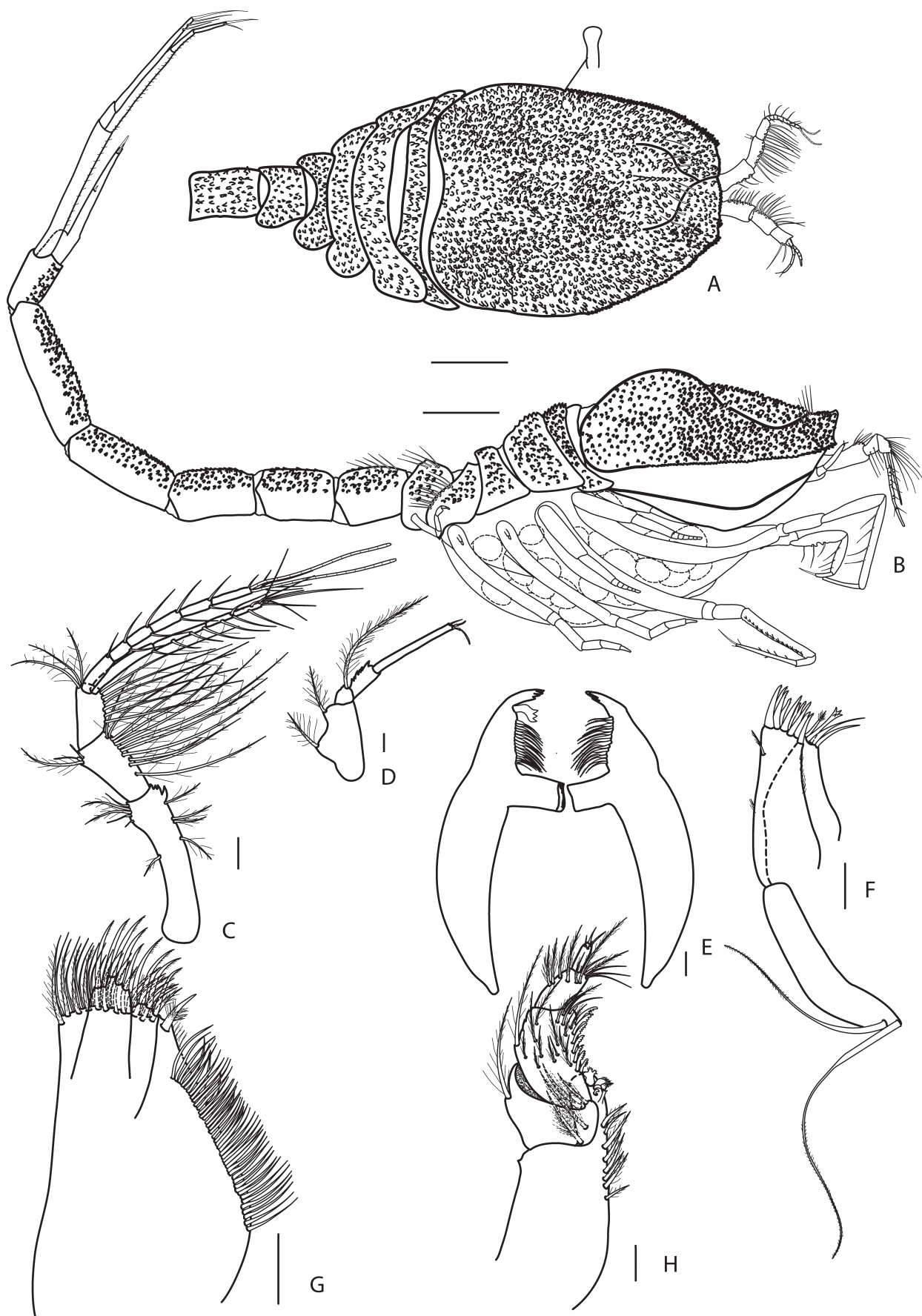


FIGURE 63. *Platytyphlops petrescui* n. sp. Holotype ovigerous female GAM CUM 13931, A, dorsal view; B, side view; C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1. Scale bars full body 1.0 mm, all others 0.1 mm.

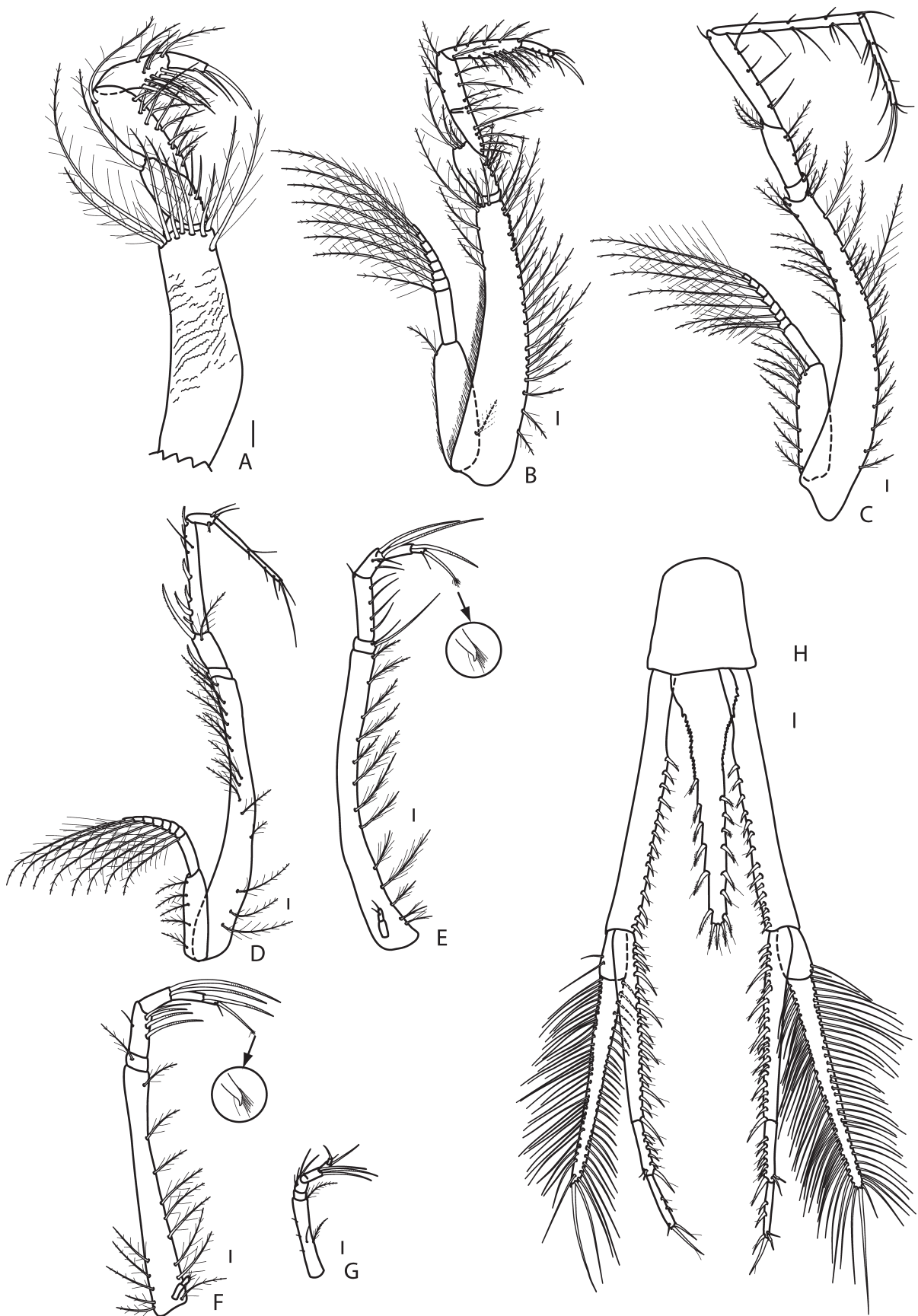


FIGURE 64. *Platytyphlops petrescui* n. sp. Holotype ovigerous female GAM CUM 13931, A, maxilliped 2; B, maxilliped 3; C, pereopod 1; D, pereopod 2; E, pereopod 3; F, pereopod 4; G, pereopod 5; H, telson and uropods. Scale bars 0.1 mm.

Antenna of 4 articles; article 1 with 2 pappose setae; article 2 with 1 pappose seta; article 3 margin serrate, unarmed; article 4 2.0 length of article 2 and 3 together, with 2 pedunculate and 1 simple setae terminally (Fig. 63D).

Mandible navicular, with 14 micro serrate setae medially, *lacinia mobilis* with 3 cusps (Fig. 63E)

Maxillule with 2 endites; outer endite with 10 micro serrate setae; inner endite with 2 simple, 1 micro serrate and 1 dentate setae; palp with 2 setae (Fig. 63F).

Maxilla with 3 endites; broad endite distal margin with simple and pappose setae, medial margin with row of setae; medial narrow endite with 4 micro serrate setae terminally; distal narrow endite with 5 micro serrate setae terminally; both narrow endites extend past distal margin of broad endite (Fig. 63G).

Maxilliped 1 basis produced as broad lobe distally, lobe medial margin with 8 plumose setae, lateral margin of lobe with 4 pappose setae, distal margin with complex setae; ischium absent; merus with 1 plumose seta laterally; carpus 2.3 merus length, covered with pappose and comb setae, with 1 plumose seta laterally; propodus 0.5 carpus length, with pappose and simple setae; dactylus 0.6 propodus length, with 3 short simple setae terminally (Fig. 63H).

Maxilliped 2 basis with 9 plumose setae distally; ischium unarmed; merus 10.0 ischium length, with 2 simple setae medially and 1 plumose seta laterally; carpus 1.5 merus length, with 12 plumose setae medially and 1 plumose seta laterally; propodus 0.7 carpus length, with simple and plumose setae; dactylus 0.7 propodus length, with 3 simple setae terminally (Fig. 64A).

Maxilliped 3 basis longer than all other articles together, medial margin lined with plumose setae, lateral margin with fine hair like setae, with plumose setae distally, not expanded; ischium 0.02 basis, unarmed; merus 8.0 ischium length, plumose setae medially and laterally; carpus 2.1 merus length, with plumose setae medially and laterally; propodus 0.8 carpus length, with plumose setae medially and laterally; dactylus 0.5 propodus length, with simple setae; exopod as long as basis, basal article with 1 plumose seta, flagellum with plumo-annulate setae (Fig. 64B).

Pereopod 1 basis longer than next 4 articles together, medial margin lined with plumose setae, lateral margin with plumose setae; ischium 0.05 basis length, with 1 plumose seta; merus 4.0 ischium length, with plumose setae medially and laterally; carpus 1.6 merus length, with simple setae medially; propodus 0.8 carpus length, with simple setae; dactylus subequal to propodus, with simple setae; exopod shorter than basis, basal article with 8 plumose setae, flagellum with plumo-annulate setae (Fig. 64C).

Pereopod 2 basis as long as all other articles together, with plumose setae; ischium 0.04 basis length, with 1 micro serrate seta; merus 3.5 ischium length, with 1 micro serrate and 1 plumose setae; carpus 2.9 merus length, with 5 micro serrate and 3 simple setae; propodus 0.25 carpus length, with 2 pedunculate and 2 simple setae; dactylus 3.2 propodus length, with simple setae; exopod shorter than basis, basal article with 5 plumose setae, flagellum with plumo-annulate setae (Fig. 64D).

Pereopod 3 basis 2.2 all other articles together, margin with 13 pappose setae; ischium 0.04 basis length, with 2 simple setae; merus 5.5 ischium length, with simple setae; carpus 0.5 merus length, with 2 simple and 2 annulate setae; propodus equal to carpus, with 1 annulate seta; dactylus 0.4 propodus length, with complex terminal seta (see detail in fig. 64F); exopod rudimentary, 0.09 basis length, of 2 articles, with simple setae (Fig. 64E).

Pereopod 4 basis 2.05 all other articles together, with plumose setae; ischium 0.04 basis length, with 1 plumose seta; merus 4.0 ischium length, with 2 simple and 3 annulate setae; carpus 0.6 merus length, with 2 annulate setae; propodus equal to carpus, with 1 annulate seta; dactylus 0.4 propodus length, with complex terminal seta (see detail); exopod rudimentary, 0.1 basis length, of 2 articles, with simple setae (Fig. 64F).

Pereopod 5 basis 1.4 other articles together, with 1 simple, 1 plumose and 1 pappose setae; ischium 0.07 basis length, with 1 plumose seta; merus 2.0 ischium length, with 2 simple setae; carpus 2.0 merus length, with 3 annulate setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.5 propodus length, with simple setae (Fig. 64G).

Telson 2.3 length of pleonite 6, with 6 micro serrate with subterminal setule lateral setae, 3 micro serrate with subterminal setule terminal setae (Fig. 64H).

Uropod peduncles 2.4 length of pleonite 6, equal to telson length, with 15 setae with single subterminal setule medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 longer than 2 and 3 together, with 20–22 setae with single subterminal setule medially; article 2 0.3 article 1 length, with 5–7 setae with single subterminal setae medially, 1 pedunculate and 1 simple setae laterally; article 3 equal to article 2, with 3 setae with single

subterminal setule medially, 1 pedunculate and 1 simple setae laterally, terminal seta with single subterminal setule, 0.7 article 3 length. Uropod exopod 0.9 length of endopod; article 1 0.2 length of article 2, with 2 simple setae; article 2 with simple setae on both margins, terminal seta 0.5 article 2 length (Fig. 64H).

Etymology. The species is named in honor of Iorgu Petrescu, in recognition of his extensive contributions to cumacean systematics.

Depth. 3658–3674 m

Distribution. Weddell Sea; Tasman Plain, off Australia .

Remarks. This species is similar to *Platytyphlops echinatus* and *P. tuberculatus*, in that the ornamentation of the carapace is dorsal to the marginal carina, and there are no other obvious ridges. *Platytyphlops petrescui* can easily be distinguished from *P. tuberculatus* by the antennule; in *P. tuberculatus* the first article of the antennule is greatly expanded, but in *P. petrescui* the first article is the same width as the second article. *Platytyphlops petrescui* can be distinguished from *P. echinatus* by the type and pattern of ornamentation, the setation of the antennule, and the proportions and armature of the telson. In *P. echinatus* the carapace and dorsal surfaces of the pereonites are covered in spines, the antennule peduncle has only two small setae, the accessory flagellum is shorter than the main flagellum, the telson is distinctly shorter than the uropod peduncles, and there are only two pairs of lateral setae on the telson; in comparison, in *P. petrescui* the dorsal surfaces of the carapace, pereonites and pleonites are covered in blunt tubercles, the antennule peduncle bears many long plumose setae, the flagella are equal in length, the telson is as long as the uropod peduncles, and the telson has six pairs of lateral setae.

***Platytyphlops racovitzai* (Petrescu & Wittmann, 2003) n. comb.**

Paralamprops racovitzai Petrescu & Wittmann, 2003: 591–595, figs 7, 255–284.

Type material. Holotype: NHMW 19661, subadult female. Weddell Sea, 70°58'S, 11°11'W.

Paratypes: GAM Cum 271, 5 subadult females; GAM Cum 272, subadult female; GAM Cum 273, subadult female; GAM Cum 274, subadult male; RMNH N 288, 3 subadult females; RMNH N 289, subadult female; RMNH N 290, 2 subadult females; NHMW 19664, 1 subadult female, 1 subadult male; NHMW 19662, subadult female; NHMW 19663, subadult male.

Diagnosis. Carapace with 3 pairs of sinuate lateral ridges, marginal carina entire, ridge absent on pseudorostrum; eyelobe with lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 0.8 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae subequal. Uropod endopod article 1 1.6–1.8 length of articles 2 and 3 together. *Adult male* unknown.

Depth. 280–520 m.

Distribution. Weddell Sea, continental shelf.

Remarks. *Platytyphlops racovitzai* is most similar to *P. rossi*, but it can be differentiated by the carapace. In *P. racovitzai* the ridges are tall, narrow and have an undulating hyaline margin, while in *P. rossi* the ridges are much shorter and do not have a hyaline margin.

***Platytyphlops rossi* (Jones, 1971) n. comb.**

Paralamprops rossi Jones, 1971: 37–39, fig. 3.

Type material. Holotype: NIWA 1634, adult female. Ross Sea, 76°6–11'S, 164°46'E.

Diagnosis. Carapace with 2 pairs of lateral ridges, marginal carina entire, ridge present on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; main flagellum broken. Telson shorter than uropod peduncles, with 3 terminal setae, terminal setae equal. Uropod endopod article 1 1.8 length of articles 2 and 3 together. *Adult male* unknown.

Depth. 406–705 m.

Distribution. Ross Sea, Weddell Sea, Antarctic.

Remarks. The most similar species is *Platytyphlops racovitzai*, which is also known from the Antarctic. However, in *P. racovitzai* the carapace ridges have a tall, narrow hyaline margin, while in *P. rossi* the ridges are not

tall and do not have a hyaline margin. *Platytyphlops crosnieri* is also similar to *P. rossi*; however, in *P. rossi* there is a ridge present on the pseudorostrum, while in *P. crosnieri* there is no ridge on the pseudorostrum.

***Platytyphlops semiornatus* (Fage, 1929) n. comb.**

Paralamprops semiornatus Fage, 1929: 24–26, pl. 2, figs 56–63.—Roccatagliata, 1994: 420–429, figs 15–33.

Type material. Holotype: MNHN-CU319, ovigerous female. West of Portugal.

Diagnosis. Carapace without lateral ridges, marginal carina dentate, ridge absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 1.1 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, central seta longest. Uropod endopod article 1 1.5 length of articles 2 and 3 together. *Adult male* carapace rectangular in dorsal view, with sharp corners. Antennule with cluster of aesthetascs on article 1 of main flagellum. Antennal peduncle articles 4 and 5 with setae around entire circumference, flagellum extending past pereon, but not to end of pleon.

Depth. 2000–4000 m.

Distribution. North-east Atlantic, 41°1'N, 9°54'W and 38°N, 67–71°W.

Remarks. *Platytyphlops semiornatus* is most similar to *P. girardi*, but in *P. girardi* the carapace is as wide as it is long, while in *P. semiornatus* the carapace is distinctly longer than wide.

***Platytyphlops taylorae* n. sp.**

(Figs 65–67)

Type material. Holotype: ovigerous female, NMV J62274, 66°2'54"–3'S, 49°49'24" E, 738–806 m, off Enderby Land, East Antarctica. Paratypes: ovigerous female, dissected, NMV J62275, 66°2'54"–3'S, 49°49'24" E, 738–806 m, off Enderby Land, East Antarctica; subadult male, dissected, NMV J54363, 66°2'54"–3'S, 49°47'54"–49°50'E, 690–911 m, off Enderby Land, East Antarctica, 29–30 November 1985.

Diagnosis. Carapace with 4 pairs of lateral ridges, covered in small pits, marginal carina entire, ridge present on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 not expanded; accessory flagellum 1.0 main flagellum. Telson shorter than uropod peduncles, with 3 terminal setae, central seta less than half length of outer pair. Uropod endopod article 11.4 length of articles 2 and 3 together. *Subadult male* carapace without pits, dorsoventrally flattened relative to female. Telson as long as uropod peduncles, with 3 equal terminal setae

Description. Holotype ovigerous female, NMV J62274, paratype ovigerous female, NMV J62275.

Ovigerous female, holotype 7.6 mm, paratype 7.0 mm. Carapace covered with small pits, dorsoventrally flattened, dorsolateral posterior expansion, dorsal carina posterior 0.5 of carapace, 1 short posterior lateral ridge, 1 longer mid-lateral ridge, 1 short ridge from anterior margin on pseudorostral lobes; pseudorostral lobes 0.3 carapace length; eyelobe 0.1 carapace length; carapace 1.2 length of pereonites together (Fig. 65A–B). Paratype ovigerous female, NMV J62275, 7.0 mm.

Antennule peduncle article 1 longest, surface scaled, 1 pedunculate and 4 simple setae; article 2 0.75 article 1 length, with 4 simple setae; article 3 0.7 article 2 length, with 4 simple setae; main flagellum of 4 articles, with simple setae and 2 aesthetascs terminally; accessory flagellum of 3 articles, equal to main flagellum, with simple setae (Fig. 65C).

Antenna of 4 articles; article 1 with 1 pappose seta; article 2 unarmed; article 3 margin serrate, with 1 pappose and 2 simple setae; article 4 1.6 article 3 length, with 2 pedunculate and 2 simple setae terminally (Fig. 65D).

Mandible navicular, with 8 microserrate setae medially, *lacinia mobilis* with 4 cusps (Fig. 65E).

Maxillule with 2 endites; outer endite with 9 stout setae; inner endite with 3 simple and 1 dentate setae; palp with 2 setae (Fig. 65F).

Maxilla with 3 endites; broad endite distal margin with pappose and simple setae, medial margin with row of simple setae; medial narrow endite with 4 simple setae terminally; distal narrow endite with 5 simple setae terminally; both narrow endites extending past distal margin of broad endite (Fig. 65G).

Maxilliped 1 basis produced distally as broad lobe, distal margin of lobe with pappose and dentate setae,

medial margin with microsetate and pappose setae; ischium absent; merus with 2 pappose setae medially, 1 pappose seta laterally; carpus 2.5 merus length, medial face with pappose and comb setae, 1 pappose seta laterally; propodus 0.7 carpus length, with 2 plumose and 5 simple setae distally; dactylus 0.4 propodus length, with 4 simple setae terminally (Fig. 65H).

Maxilliped 2 basis 1.0 all other articles together, 6 pappose setae distally; ischium 0.1 basis length, unarmed; merus 1.7 ischium length, with 2 pappose setae medially and 1 pappose seta laterally; carpus 2.0 merus length, with 10 plumose setae medially and 1 pappose seta laterally; propodus 0.5 carpus length, with plumose setae; dactylus 0.8 propodus length, with 3 simple setae terminally (Fig. 65I).

Maxilliped 3 basis 1.2 all other articles together, with 4 pappose setae medially, 5 plumose setae laterally, not expanded; ischium 0.05 basis length, unarmed; merus 1.5 ischium length, with 2 pappose setae medially, 1 pappose seta laterally; carpus 4.3 merus length, with 16 plumose setae medially, 2 plumose setae laterally; propodus 0.6 carpus length, with plumose setae; dactylus 0.5 propodus length, with 5 simple setae terminally; exopod as long as basis, basal article with 9 plumose setae, flagellum with plumo-annulate setae (Fig. 66A).

Pereopod 1 broken.

Pereopod 2 basis longer than next 4 articles together, with 8 plumose and 11 simple setae; ischium 0.06 basis length, unarmed; merus 3.5 ischium length, with 3 plumose and 1 simple seta, 1 microsetate seta with single subterminal setule; carpus 2.6 merus length, with 8 microsetate setae with single subterminal setule, 1 plumose seta; propodus 0.2 carpus length, with 2 simple and 1 microsetate seta with single subterminal setule; dactylus 3.25 propodus length, with 3 microsetate setae with single subterminal setule, 4 simple setae, terminal seta broken; exopod shorter than basis, basal article with 7 plumose setae, flagellum with plumo-annulate setae (Fig. 66B).

Pereopod 3 broken.

Pereopod 4 basis 2.8 all other articles together, with 11 plumose setae; ischium 0.02 basis length, unarmed; merus 6.0 ischium length, with 1 simple seta; carpus 0.7 merus length, with 1 simple and 2 annulate setae; propodus equal to carpus length, with 1 annulate seta; dactylus 0.5 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles with simple setae (Fig. 66C).

Pereopod 5 basis 1.2 all other articles together, with 1 simple and 8 plumose setae; ischium 0.1 basis length, with 1 simple and 1 microsetate setae; merus 2.0 ischium length, with 1 annulate seta; carpus equal to merus length, with 2 simple and 2 annulate setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.5 propodus length, with 3 simple setae terminally (Fig. 66D).

Telson 2.4 length of pleonite 6, with 4 setae with single subterminal setule laterally, 3 terminal setae, central seta short and microsetate, outer setae simple (Fig. 66E).

Uropod peduncles 2.7 pleonite 6 length, 1.1 telson length, with 16–17 setae with single subterminal setule medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 longer than articles 2 and 3 together, with 10 setae with single subterminal setule medially; article 2 0.5 article 1 length, with 4 setae with single subterminal setule medially, 1 seta with single subterminal setule laterally; article 3 0.6 article 2 length, with 1 lateral and 1 medial setae with single subterminal setule, terminal seta with single subterminal setule, equal to article 3 length. Uropod exopod 0.8 length of endopod; article 1 0.2 length of article 2, with 1 simple seta; article 2 with 7 simple setae medially, 8–9 simple setae laterally, 1 seta with single subterminal setule laterally, simple terminal seta 0.6 article 2 length (Fig. 66E).

Paratype subadult male, NMV J54363.

Subadult male, 8.5 mm. Carapace as in female (Fig. 67A).

Antennule peduncle article 1 as long as articles 2 and 3 together, surface scaled, unarmed; article 2 0.7 article 1 length, with 1 simple seta; article 3 0.7 article 2 length, with 5 simple setae; main flagellum of 5 articles, with simple setae and 2 aesthetascs terminally; accessory flagellum of 4 articles, equal to main flagellum length, with simple setae (Fig. 67B).

Pereopod 1 basis longer than next 3 articles together, with 15 plumose setae, margins serrate; ischium 0.07 basis length, with 1 plumose seta; merus 4.7 ischium length, with 5 plumose setae, margin serrate; carpus 1.3 merus length, with 4 plumose setae; propodus 1.2 carpus length, with 6 simple setae; dactylus 0.8 propodus length, with 9 simple setae, 1 simple seta terminally; exopod as long as basis, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 67C).

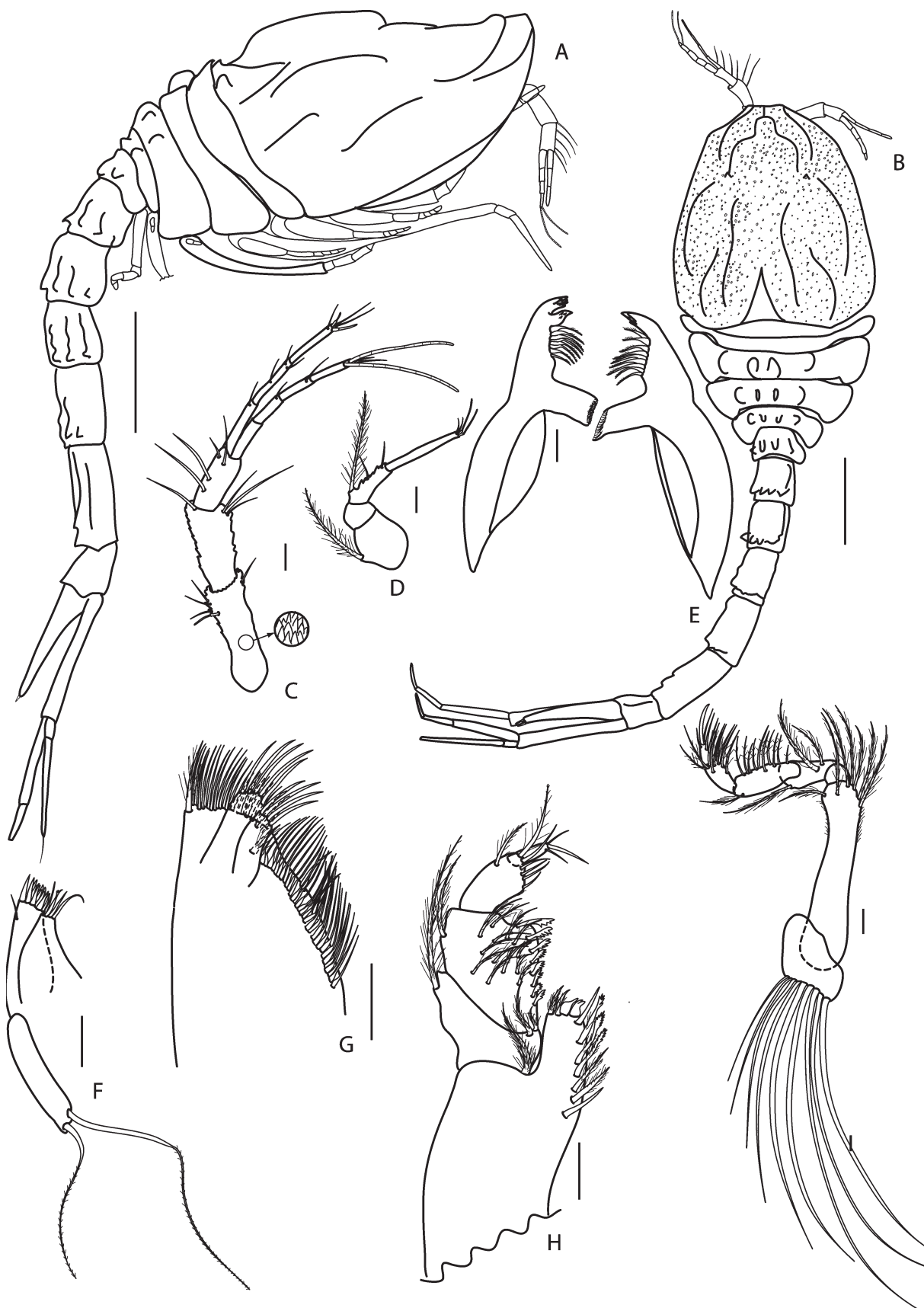


FIGURE 65. *Platytyphlops taylorae* n. sp. Holotype ovigerous female NMV J62274, A, side view; B, dorsal view. Paratype ovigerous female NMV J62275, C, antennule; D, antenna; E, mandibles; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

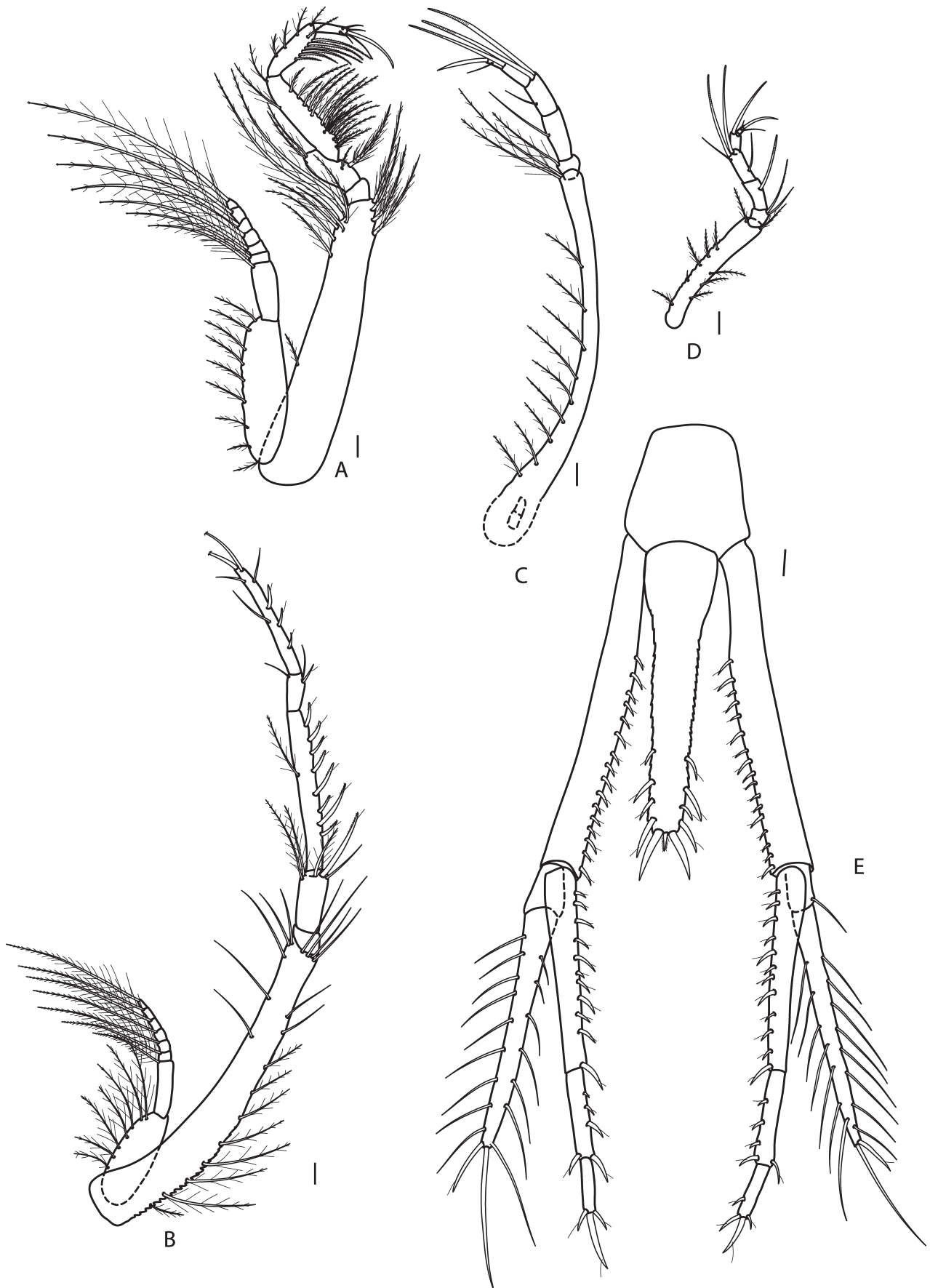


FIGURE 66. *Platytyphlops taylorae* n. sp. Paratype ovigerous female NMV J62275, A, maxilliped 3; B, pereopod 2; C, pereopod 4; D, pereopod 5; E, telson and uropods. Scale bars 0.1 mm.



FIGURE 67. *Platytyphlops taylorae* n. sp. Paratype subadult male NMV J54363, A, side view; B, antennule; C, pereopod 1; D, pereopod 2; E, pleopod 1; F, telson and uropods. Scale bars full body 1.0 mm, all others 0.1 mm.

Pereopod 2 basis longer than next 4 articles together, with 7 plumose setae, margins serrate; ischium 0.06 basis length, with 1 microsetate seta with single subterminal setule; merus 3.0 ischium length, with 1 microsetate seta with single subterminal setule and 1 plumose seta; carpus 2.8 merus length, with 5 microsetate setae with single subterminal setule, 1 plumose seta; propodus 0.3 carpus length, with simple seta; dactylus 2.6 propodus length, with 6 simple setae, 1 simple seta terminally; exopod shorter than basis, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 67D).

Telson 4.2 length of pleonite 6, lateral margins serrate, with 6–8 simple setae with single subterminal setule laterally, 3 simple terminal setae, longer than lateral setae (Fig. 67F).

Uropod peduncles 4.1 pleonite 6 length, equal to telson length, with 15 simple setae with single subterminal setule medially. Uropod endopod of 3 articles, 1.1 peduncle length; article 1 1.9 articles 2 and 3 together, with 15 simple setae with single subterminal setule medially; article 2 0.3 article 1 length, with 4 simple setae with single subterminal setule medially; article 3 0.9 article 2 length, with 3 medial and 1 lateral simple setae with single subterminal setule, terminal seta simple with single subterminal setule, 0.7 article 3 length. Uropod exopod 0.9 length of endopod; article 1 0.2 article 2 length; article 2 with 6 medial and 5 lateral simple setae with single subterminal setule, terminal seta broken (Fig. 67F).

Etymology. The species is named *taylorae* in honor of Dr. Joanne Taylor, Manager of the Natural Science Collections, Museums Victoria, Melbourne, Australia, for her contributions to peracarid systematics, hospitality and help with loans and collection information.

Depth. 690–1264 m.

Distribution. Tasmania, East Antarctica, 41°–66° S, 29°–148° E.

Remarks. The carapace of *Platytyphlops taylorae* is sculptured with many ridges, and can be differentiated from the other sculptured species by the pleon being relatively short, shorter than the carapace and pereonites together. In addition, the carapace is covered in small pits.

***Platytyphlops tuberculatus* (Roccatagliata, 1994) n. comb.**

Paralamprops tuberculatus Roccatagliata, 1994: 416–420, figs 1–14.

Type material. Holotype: NHM 1994.2140, adult male. Paratype: NHM 1994.2139, juvenile. Rockall Trough, 54°40'N, 12°16'W. Not seen.

Diagnosis. *Female* unknown. *Adult male* carapace without lateral ridges, subrectangular in dorsal view with rounded corners, marginal carina dentate, carapace covered in small blunt tubercles dorsal of marginal carina, ridge absent on pseudorostrum; eyelobe without lenses or tumidities. Antennule article 1 expanded, more than twice as wide as article 2; accessory flagellum 1.0 main flagellum; with cluster of aesthetascs on first article of main flagellum. Telson less than 0.5 uropod peduncles, with 3 terminal setae, central seta longest. Uropod endopod article 11.7 length of articles 2 and 3 together.

Depth. 2900–4125 m.

Distribution. Rockall Trough, North-east Atlantic, 47°34.9'–55°7.7'N, 9°40.9'–12°16'W.

Remarks. This species is unique among species of *Platytyphlops* or *Paralamprops* in the expanded article 1 of the antennule peduncle. In addition, the carapace is subrectangular in dorsal view.

***Pseudoarchaeocuma* n. gen.**

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 2 unequal setae. Pereopod 1 unknown. Pereopod 5 shorter than pereopod 4 basis. Telson long, at least 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, with 2 pairs of small pleopods. *Male* unknown.

Etymology. The new genus is named *Pseudoarchaeocuma* due to similarity to the genus *Archaeocuma* in the presence of pleopods in the female. Gender neuter.

Type species. *Pseudoarchaeocuma bacescui*.

Remarks The new genus is similar to *Archaeocuma*; however, the new genus can be separated from *Archaeocuma* by the presence of two pairs of pleopods in the female, rather than one pair as in *Archaeocuma*.

***Pseudoarchaeocuma bacescui* n. sp.**

(Figs 68–69)

Type material. Holotype: ovigerous female, dissected, NMV J62283, 38°16'24"–38°17'42"S, 149°26'6"–149°27'36"E, 800 m.

Diagnosis. Carapace with branchial swellings, pseudorostrum excavate in dorsal view.

Description. Holotype ovigerous female, NMV J62283.

Ovigerous female, 4.8 mm. Carapace flattened, marginal carina present, paired dorsolateral expansion; pseudorostral lobes 0.3 carapace length, anterior margin concave from dorsal view; eyelobe 0.4 carapace length; carapace 1.9 length of pereonites together (Fig. 68A, B).

Antennule peduncle article 1 equal to article 2 length, with pappose seta; article 2 unarmed; article 3 0.5 article 2 length, unarmed; flagella broken, at least 2.0 article 3 length (Fig. C68).

Antenna of 4 articles; article 1 with pappose seta; article 2 with 2 pappose setae; article 3 unarmed; article 4 with 3 small simple setae terminally (Fig. 68D).

Mandible navicular, with 11 simple setae medially (Fig. 68E).

Maxillule with 2 endites; outer endite with 12 simple setae; inner endite with 4 simple and 1 dentate setae; palp with 2 setae (Fig. 68F).

Maxilla with 3 endites; broad endite distal margin with simple and pappose setae; medial narrow endite with 4 microserrate setae terminally; distal narrow endite with 6 microserrate setae terminally; both narrow endites not extending to distal margin of broad endite (Fig. 68G).

Maxilliped 1 basis produced medially as broad lobe, distal margin with 5 simple setae, 2 hook setae medially, row of 5 pappose setae mid-lobe; ischium absent; merus with pappose seta laterally; carpus 2.1 merus length, with 8 simple and 7 comb setae medially, pappose seta laterally; propodus 0.5 carpus length, with 3 simple and 1 pappose setae medially; dactylus 0.6 propodus length, with 3 simple setae terminally (Fig. 68H).

Maxilliped 2 basis 0.9 all other articles together, with 5 plumose setae; ischium 0.05 basis length, unarmed; merus 5.0 ischium length, with pappose seta medially, plumose seta laterally; carpus 1.3 merus length, with 3 plumose setae medially, plumose seta laterally; propodus 1.0 carpus length, with 2 plumose setae medially, plumose seta laterally; dactylus 0.3 propodus length, with 3 simple setae terminally (Fig. 68I).

Maxilliped 3 basis 1.2 all other articles together, with 7 pappose setae medially, 3 plumose setae at distolateral corner; ischium 0.01 basis length, with plumose seta; merus 10.0 ischium length, with pappose seta medially, 2 plumose setae laterally; carpus 2.3 merus length, with 7 plumose setae medially, 2 plumose setae laterally; propodus 0.7 carpus length, with 5 plumose setae medially, 3 plumose setae laterally; dactylus 0.5 propodus length, with 3 simple setae terminally; exopod 0.9 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 69A).

Pereopod 1 broken, not illustrated.

Pereopod 2 basis equal to all other articles together, with 10 pappose setae; ischium 0.07 basis length, with pappose seta; merus 2.6 ischium length, with pappose seta; carpus 0.7 merus length, with 1 simple and 1 pappose setae; propodus 1.3 carpus length, with simple seta; dactylus 0.5 propodus length, with 4 simple setae terminally; exopod 0.8 basis length, basal article with 4 pappose setae, flagellum with plumo-annulate setae (Fig. 69B).

Pereopod 3 basis 2.5 all other articles together, with 15 plumose setae; ischium 0.06 basis length, with 2 simple setae; merus 1.8 ischium length, unarmed; carpus equal to merus length, with 1 simple and 2 annulate setae; propodus 0.7 carpus length, with 1 simple and 1 annulate setae; dactylus 0.5 propodus length, with 2 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles with 5 simple setae (Fig. 69C).

Pereopod 4 basis 2.0 all other articles together, with 3 simple and 10 plumose setae; ischium 0.04 basis length, with 2 simple setae; merus 3.7 ischium length, with simple seta; carpus 0.8 merus length, with 2 simple and 2 annulate setae; propodus 0.9 carpus length, with annulate seta; dactylus 0.5 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles with 1 simple and 3 plumose setae (Fig. 69D).

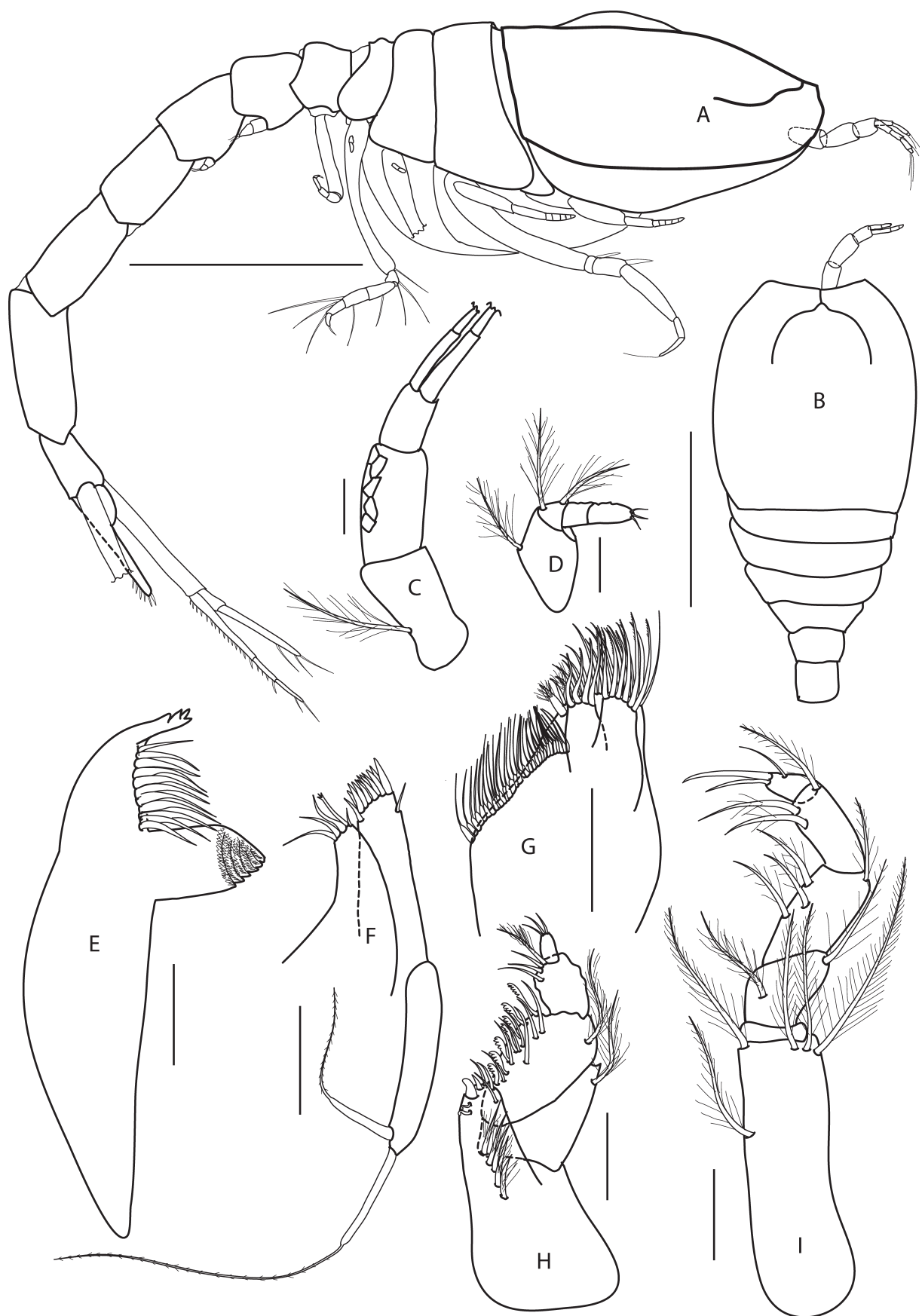


FIGURE 68. *Pseudoarchaeocuma bacescui* n. sp. Holotype ovigerous female NMV J62283, A, side view; B, dorsal view; C, antennule; D, antenna; E, mandible; F, maxillule; G, maxilla; H, maxilliped 1; I, maxilliped 2. Scale bars full body 1.0 mm, all others 0.1 mm.

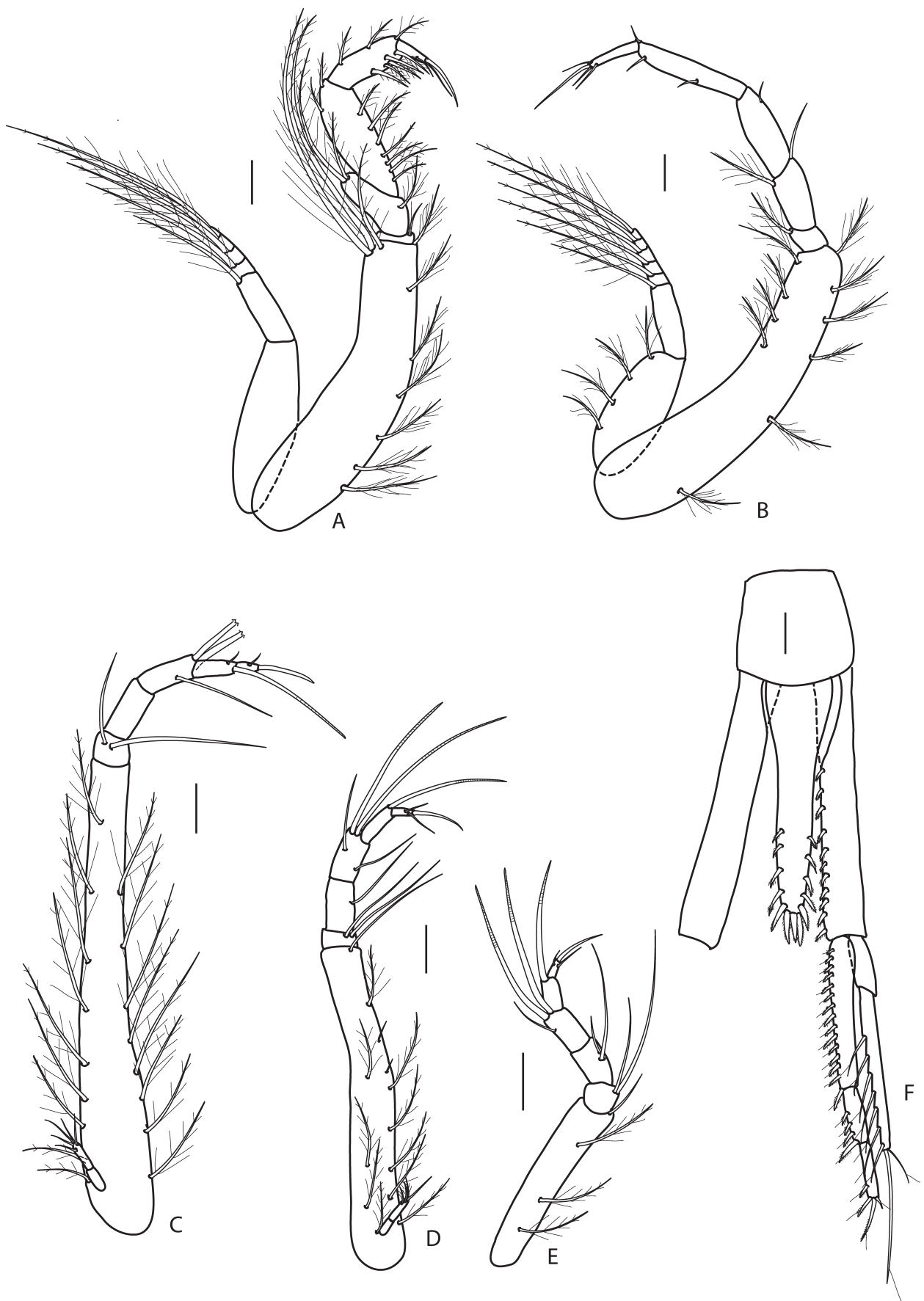


FIGURE 69. *Pseudoarchaeocum bacescui* n. sp. Holotype ovigerous female NMV J62283, A, maxilliped 3; B, pereopod 2; C, pereopod 3; D, pereopod 4; E, pereopod 5; F, telson and uropods. Scale bars 0.1 mm.

Pereopod 5 basis equal to all other articles together, with 1 simple and 3 plumose setae; ischium 0.2 basis length, with 2 simple setae; merus 1.3 ischium length, with 2 simple setae; carpus 1.1 merus length, with 1 simple and 2 annulate setae; propodus 0.8 carpus length, with annulate seta; dactylus 0.6 propodus length, with 3 simple setae terminally (Fig. 69E).

Telson 2.0 length of pleonite 6, with 5 pairs micro serrate lateral setae, 3 micro serrate terminal setae (Fig. 69F).

Uropod peduncles 2.3 pleonite 6 length, 1.1 telson length, with 11 micro serrate setae medially. Uropod endopod of 3 articles, 1.0 peduncle length; article 1 1.3 articles 2 and 3 together, with 15 micro serrate setae with single subterminal setule medially; article 2 0.4 article 1 length, with 4 micro serrate setae with single subterminal setule medially; article 3 equal to article 2 length, with 2 micro serrate setae with single subterminal setule medially, seta with single subterminal setule laterally, terminal micro serrate seta with single subterminal setule, 0.8 article 3 length. Uropod exopod 0.8 length of endopod; article 1 0.3 article 2 length, unarmed; article 2 3.0 length article 1, with 7 setae with single subterminal setule medially, seta with single subterminal setule laterally, terminal seta with single subterminal setule, 0.8 article 2 length (Fig. 69F).

Pleopod 1 of 2 segments, with short setae (Fig. 68A).

Pleopod 2 of 2 segments, with short setae (Fig. 68A).

Etymology. The new species is named in honor of Mihai Băcescu, who described the genus *Archaeocuma*, the first cumacean genus with pleopods in the female.

Depth. 800 m.

Distribution. Southeastern Australia, 38°S, 149°E.

Remarks. This species is distinctive in the female possessing two pairs of pleopods.

***Pseudodiastylis* Calman, 1905**

Pseudodiastylis Calman, 1905: 1, 16.

Type species. *Pseudodiastylis ferox* Calman, 1905, by monotypy.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes long or short, acute. Antennule flagella unequal, accessory flagellum much less than 0.5 length of article 1 of main flagellum. Mandible navicular. Maxillule palp absent. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson long, at least 0.9 uropod peduncle length, with post-anal constriction. Uropod endopod of 2 articles. Uropod exopod article 1 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with antenna unknown, without penial lobes, with 3 pairs of pleopods.

Species. *Pseudodiastylis benthedii* Ledoyer, 1988, *P. delamarei* Reyss, 1975, *P. ferox* Calman, 1905.

Remarks. Within the Lampropidae, this genus is unusual in having a very short accessory flagellum. The only other genus with a short accessory flagellum is *Austrolamprops*, in which the accessory flagellum is greater than 0.5 the length of the first article of the main flagellum. In *Pseudodiastylis* the accessory flagellum is minute, much less than 0.5 the length of the main flagellum.

Key to the species of *Pseudodiastylis*

- | | | |
|----|---|---------------------|
| 1. | Carapace without ridges | 2 |
| - | Carapace with ridges | <i>P. delamarei</i> |
| 2. | Pseudorostrum more than 0.5 carapace length | <i>P. ferox</i> |
| - | Pseudorostrum less than 0.5 carapace length | <i>P. benthedii</i> |

***Pseudodiastylis benthedii* Ledoyer, 1988**

Pseudodiastylis benthedii Ledoyer, 1988: 149–150, fig. 13.

Type material. Holotype: MNHN, adult male. Southeast of the Iles Glorieuses, Mozambique Channel, Indian Ocean, 11°44'S, 47°35'E. Not seen.

Diagnosis. Carapace without ridges, covered in spines; pseudorostrum less than 0.5 carapace length. *Adult male* unknown.

Depth. 3716 m.

Distribution. Mayotte Islands, Mozambique Channel, Indian Ocean, 11°44'S, 47°35'E.

Remarks. This species is similar to *Pseudodiastylis ferox* in being covered in spines; however, *P. benthedii* has a much shorter pseudorostrum, much less than 0.5 the carapace length. In *P. ferox* the pseudorostrum is more than 0.5 the carapace length.

***Pseudodiastylis delamarei* Reyss, 1975**

Pseudodiastylis delamarei Reyss, 1975: 174–178, figs 3A–J, 4A–L

Type material. Holotype: MNHN, adult male. Brazil, 7°58'S, 34°13'W. Not seen.

Diagnosis. Carapace with ridges, not covered in spines; pseudorostrum less than 0.5 carapace length. *Adult male* unknown.

Depth. 834–1007 m.

Distribution. Atlantic coast of Brazil.

Remarks. This species has several ridges on the carapace, and is thus easily distinguished from the other two species in the genus, which do not have ridges on the carapace and have the carapace covered in spines.

***Pseudodiastylis ferox* Calman, 1905**

Pseudodiastylis ferox Calman, 1905: 16, pl. 2 figs 15–25.

Type material. Holotype: RMNH. Celebes, 5°40.7'S, 120°45.5'E. Not seen.

Diagnosis. Carapace without ridges, covered in spines; pseudorostrum more than 0.5 carapace length. *Adult male* unknown.

Depth. 1158 m.

Distribution. Celebes (= Sulawesi, Indonesia), 5°40.7'S, 120°45.5'E.

Remarks. The carapace lacks ridges, which differentiates this species from *Pseudodiastylis delamarei*, and the pseudorostrum is greater than 0.5 the length of the carapace, which differentiates this species from *P. ferox*, in which the pseudorostrum is less than 0.5 the carapace length.

***Pseudolamprops* Gamô, 1989b**

Pseudolamprops Gamô, 1989b: 95, figs 7–10.

Type species. *Pseudolamprops spinifer* Gamô, 1989b, by monotypy.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, with spines, pseudorostral lobes short to long, pointed. Antennule flagella less than 0.5 length of peduncle article 1, accessory flagellum at least 0.5 main flagellum length. Mandible truncate. Maxillule palp with 2 setae. Pereopod 1 slender. Pereopod 5 shorter than basis of pereopod 4. Telson longer than uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 at least 0.5 length of article 2. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with antenna unknown, penial lobes unknown, with 3 pairs of pleopods.

Species. *Pseudolamprops abyssi* (Gamô, 1989a), *P. spinifer* Gamô, 1989b.

Remarks. This genus is differentiated from all other lampropid genera by the truncate mandible.

Key to the species of *Pseudolamprops*

1. Spines on anterior half of carapace restricted to median line on dorsal crest *P. abyssi*
- Spines scattered over the anterior half of the carapace *P. spinifer*

Pseudolamprops abyssi (Gamô, 1989a) n. comb.

Hemilamprops (?) *abyssi* Gamô 1989a: 29–32, fig. 10; 1989b, 100–101.

Type material. Holotype: NSMT-Cr. 9645, subadult female. 38°33.9'–38°35.5'N, 145°15.7'–145°10.1'E. Not seen.

Diagnosis. Carapace with spines on dorsal surface restricted to pair of lines of spines on anterior dorsal surface, single median line on frontal lobe, and 1 pair of spines on dorsally anterior of eyelobe. Maxilliped 1 dactylus subequal to propodus.

Depth. 5349–5368 m.

Distribution. Japan Trench, 38°33.9'N, 145°15.7'E.

Remarks. This species has only been collected once, by Gamô (1989a). This species fits the definition of *Pseudolamprops* in that it has a truncate mandible. *Pseudolamprops abyssi* can be distinguished from *P. spinifer* by the pattern of spines on the carapace. In *P. spinifer* there are many spines dorsally on the carapace, but they are not organized into lines. In *P. abyssi* there are fewer spines, they are organized into a pair of dorsal lines on the posterior half of the carapace, a single medial line dorsally on the frontal lobe, comparable to the dorsal crest found in many *Hemilamprops*, and a pair of spines on the pseudorostral lobes anterior of the eyelobe.

Pseudolamprops spinifer Gamô, 1989b

Pseudolamprops spinifer Gamô, 1989b: 95–101, figs 7–10.

Type material. Holotype: NSMT–Cr9647, subadult male. Allotype: NSMT Cr–9650, subadult female. Okinawa Trough, 26°05.7'–26°04.4'N, 125°34.6'–125°34.1'E. Not seen.

Diagnosis. Carapace dorsal surface covered with short spines. Maxilliped 1 with unique dactylus, distinctly longer than propodus and slender or “club shaped” (Gamô 1989b).

Depth. 2060–2065 m.

Distribution. Okinawa Trough, East China Sea, 26°05.7'–26°04.4'N, 125°34.6'–125°34.1'E.

Remarks. This species has only been collected once, by Gamô (1989b). This species can be distinguished from *Pseudolamprops abyssi* by the pattern of spines on the carapace. In *P. spinifer*, the spines are not organized into lines, they are scattered on the dorsal surface of the carapace, while in *P. abyssi* there are fewer spines and they are organized into distinct lines.

Quasiparalamprops n. gen.

Type species. *Quasiparalamprops chathamensis* n. gen., n. sp.

Diagnosis. Carapace dorsoventrally flattened, with marginal carina, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.8 main flagellum. Maxillule palp present, entirely without setae. Pereopod 1 slender and long. Pereopod 5 shorter than or subequal to basis of pereopod 4. Telson with post–anal constriction, with 3 terminal setae. Uropods unknown. Female with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. Male with antenna extending to posterior border of pereonite 4, without penial lobes, with 3 pairs of pleopods.

Etymology. The new genus is similar to *Paralamprops* and *Platytyphlops* in overall form, being dorsoventrally flattened with a marginal carina

Species. *Quasiparalamprops chathamensis* n. gen., n. sp.

Remarks. *Quasiparalamprops* is extremely unusual in that the maxillule palp is present, but apparently bears no setae. Among the telson bearing families, Diastylidae, Gynodiastylidae, Lampropidae and Pseudocumatidae, the absence of the maxillule palp is restricted to a few genera within the Lampropidae, as is the presence of a single seta on the maxillule palp. *Quasiparalamprops* is the first genus having a palp without setae. On the adult male paratype of *Q. chathamensis*, both maxillules were observed very closely at high magnification and neither setae nor setal bases (indicating broken setae) were observed on the palp. The maxillule of the female was not observed, because it could not be accessed without destroying the carapace of the holotype of *Q. chathamensis*, an unacceptable amount of damage to a holotype. While it is possible that this male is a single aberrant individual, there are no indications of aberrant development in the maxillule, the two endites are of the typical form with the typical arrangement and length of setae. It is unlikely that this is a sexually dimorphic difference, adult male mouthparts are typically similar or identical to functional mouthparts of the female. It is also unlikely that this is a case of end stage degeneration of mouthparts in the terminal male. Degenerate mouthparts have been observed in the ovigerous females of *Atlantocuma* Băcescu & Muradian 1974 and *Pseudopicrocuma* Akiyama 2012 (Akiyama 2012), but these are unusual cases, and degenerate mouthparts have never been reported in the adult male of any cumacean. In the case of *Atlantocuma*, the degeneration included decalcified mandibles, reduced setation on the maxilla, maxillules, maxilliped 1 and maxilliped 2, as well as slender maxillipeds 1 and 2, but the maxillule palp was still present and had 2 setae. In the case of *Pseudopicrocuma*, the degeneration included decalcified mandibles, reduced or lost setae on the maxillae and maxillules, and reduced setae on maxipellids 2 and 3, but the maxillule palp again was present and bore 2 setae.

***Quasiparalamprops chathamensis* n. sp.**

(Figs 70–72)

Type material. Holotype: ovigerous female, dissected, NIWA 45701, TAN0705/99, 44.6°S, 178.5°W, 1076–1103 m, Chatham Rise, New Zealand, April 4, 2007. Paratype: adult male, dissected, NIWA 45702, collected with holotype.

Diagnosis. *Female.* Carapace with 3 pairs of ridges, 1 long pair dorsomedially, 2 short pairs, 1 postero-laterally and 1 mid-laterally; marginal carina serrate; dorsal midline serrate from midpoint to end of eyelobe; pseudorostral lobes with dorsal serrate line, parallel to medial suture, anterior of eyelobe. *Male.* Carapace with 2 pairs of ridges, 1 long pair dorsomedially, 1 shorter pair laterally, ventral to the long ridge; marginal carina entire, dorsal midline without serrations.

Description. Holotype subadult female, NIWA 45701.

Subadult female, 6.5 mm. Carapace dorsoventrally flattened, with large dorsal ridge on posterior 0.5 of carapace, 1 short posterior ridge and 1 short mid-body ridge between dorsal ridge and marginal carina, marginal carina serrate, anterior dorsal crest with teeth; pseudorostral lobes 0.4 carapace length, with row of spines parallel to suture; eyelobe 0.07 carapace length, no lenses; carapace 1.5 length of pereonites together; pereonites 3–5 with dorsal tubercles; pleonites 1–6 with paired serrate lateral ridges (Fig. 70A, B).

Antennule peduncle article 1 longer than articles 2 and 3 together, distal margin serrate, unarmed; article 2 0.6 article 1 length, distal margin serrate, article scaled, 1 plumose seta; article 3 0.7 article 2 length, with 3 simple setae; main flagellum of 4 articles, with simple setae and 2 aesthetascs terminally; accessory flagellum of 4 articles, 0.8 length of main flagellum, with simple setae (Fig. 70C).

Antenna of 4 articles; article 1 with 1 pappose seta; article 2 with 1 pappose seta; article 3 unarmed; article 4 1.7 article 3 length, with 3 simple setae and 2 pedunculate setae terminally (Fig. 70D).

Pereopod 3 basis 1.4 all other articles together, with 2 simple setae and 1 tooth distally; ischium 0.08 basis length, unarmed; merus 3.0 ischium length, with 1 simple seta; carpus 0.8 merus length, with 1 simple and 1 annulate seta; propodus 0.6 carpus length, with 1 annulate seta; dactylus 0.7 propodus length, with 3 simple setae terminally; exopod rudimentary, 0.1 basis length, of 2 articles with simple setae (Fig. 70E).

Pereopod 5 basis equal to next three articles together, with 1 simple seta; ischium 0.2 basis length, unarmed; merus 1.75 ischium length, with 1 simple seta; carpus equal to merus length, unarmed; propodus 0.7 carpus length, with 1 simple and 1 annulate setae; dactylus 0.6 propodus length, with 2 simple setae terminally (Fig. 70F).

Telson 3.3 length of pleonite 6, with 3 microserrate lateral setae, 3 microserrate terminal setae, longer than

lateral setae (Fig. 70G).

Uropods broken.

Paratype adult male, NIWA 45702. Adult male, broken. Carapace dorsoventrally flattened, with large dorsal carina on posterior 0.5 of carapace, 1 mid lateral carina between dorsal carina and marginal carina, marginal carina entire, in comparison to the female the posterior mid-lateral carina is missing (Fig. 71A, B).

Antennule peduncle article 1 subequal to article 2, unarmed; article 2 margin with 1 tooth, 7 simple setae; article 3 0.6 article 2 length, with 3 simple setae; main flagellum of 5 articles, first article expanded with many slender aesthetascs, with simple setae and 2 aesthetascs terminally; accessory flagellum of 3 articles, equal to main flagellum length, with simple setae (Fig. 71C).

Antenna peduncle of 5 articles; article 1 unarmed; article 2 with 2 plumose setae; article 3 shortest, unarmed; articles 4 and 5 with encircling rows of setae; flagellum of short articles, each article encircled with row of setae, extending to posterior border of pleonite 4 (Fig. 71D).

Mandible with 10 micro serrate setae medially, *lacinia mobilis* with 3 cusps (Fig. 71E).

Maxillule with 2 endites; outer endite with 11 simple setae; inner endite with 4 simple and 1 dentate setae; palp present, no setae (Fig. 71F).

Maxilla with 3 endites; broad endite distal margin with simple setae, 1 pappose seta at medial corner, medial margin with row of simple setae; medial narrow endite with 4 micro serrate setae terminally; distal narrow endite with 5 micro serrate setae terminally; both narrow endites just past distal margin of broad endite (Fig. 71G).

Maxilliped 1 basis produced distally as broad lobe, distal margin of lobe with pappose and dentate setae, medial margin with row of pappose setae; ischium absent; merus with 1 plumose seta laterally; carpus 1.7 merus length, medial face with pappose and comb setae, 1 plumose seta laterally; propodus 0.75 carpus length, with simple and plumose setae; dactylus 0.5 propodus length, with 3 simple setae terminally (Fig. 72A).

Maxilliped 2 basis as long as all other articles together, with 4 plumose setae distally; ischium 0.1 basis length, with 1 plumose seta; merus 0.75 ischium length, with 2 plumose setae; carpus 4.0 merus length, with 5 plumose setae medially, 1 plumose seta laterally; propodus 0.8 carpus length, with simple and plumose setae; dactylus 0.5 propodus length, with 3 simple setae terminally (Fig. 72B).

Maxilliped 3 basis longer than all other articles together, with plumose setae, row of teeth mid-article, not expanded distally; ischium 0.02 basis length, unarmed; merus 5.0 ischium length, with 2 plumose setae medially, 1 plumose seta laterally; carpus 2.6 merus length, with 9 plumose setae; propodus 0.8 carpus length, with 5 plumose setae; dactylus 0.5 propodus length, with 2 simple setae terminally; exopod longer than basis, flagellum with plumo-annulate setae (Fig. 72C).

Pereopod 1 basis equal to next 4 articles together, margins serrate, with plumose setae; ischium 0.05 basis length, unarmed; merus 4.0 ischium length, with 2 plumose and 2 simple setae; carpus 2.1 merus length, with 1 plumose and 5 simple setae; propodus 0.8 carpus length, with 3 simple setae; dactylus 0.8 propodus length, with 6 simple setae and 2 simple setae terminally; exopod shorter than basis, basal article with 5 plumose setae, flagellum with plumo-annulate setae (Fig. 72D).

Pereopod 2 broken, not illustrated.

Pereopod 3 basis 1.9 all other articles together, with 1 simple and 3 pappose setae; ischium 0.06 basis length, with 1 simple seta; merus 2.3 ischium length, with 1 plumose seta; carpus equal to merus length, with 4 simple and 2 annulate setae; propodus 0.7 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 3 simple setae terminally; exopod shorter than basis, basal article with 4 plumose setae, flagellum with plumo-annulate setae (Fig. 72E).

Pereopod 4 basis 1.5 all other articles together, with 2 pappose and 6 plumose setae; ischium 0.07 basis length, with 1 annulate seta; merus 2.7 ischium length, with 1 annulate seta; carpus 1.1 merus length, with 3 simple and 2 annulate setae; propodus 0.6 carpus length, with 1 annulate seta; dactylus 0.8 propodus length, with 3 simple setae terminally; exopod shorter than basis, basal article with 2 plumose setae, flagellum with plumo-annulate setae (Fig. 72F).

Pereopod 5 basis 1.2 all other articles together, with 1 pappose, 1 simple and 2 plumose setae; ischium 0.1 basis length, with 1 annulate seta; merus 2.3 ischium length, with 1 annulate seta; carpus 1.4 merus length, with 1 simple and 3 annulate setae; propodus 0.5 carpus length, with 1 annulate seta; dactylus 0.4 propodus length, with 3 simple setae terminally (Fig. 72G).

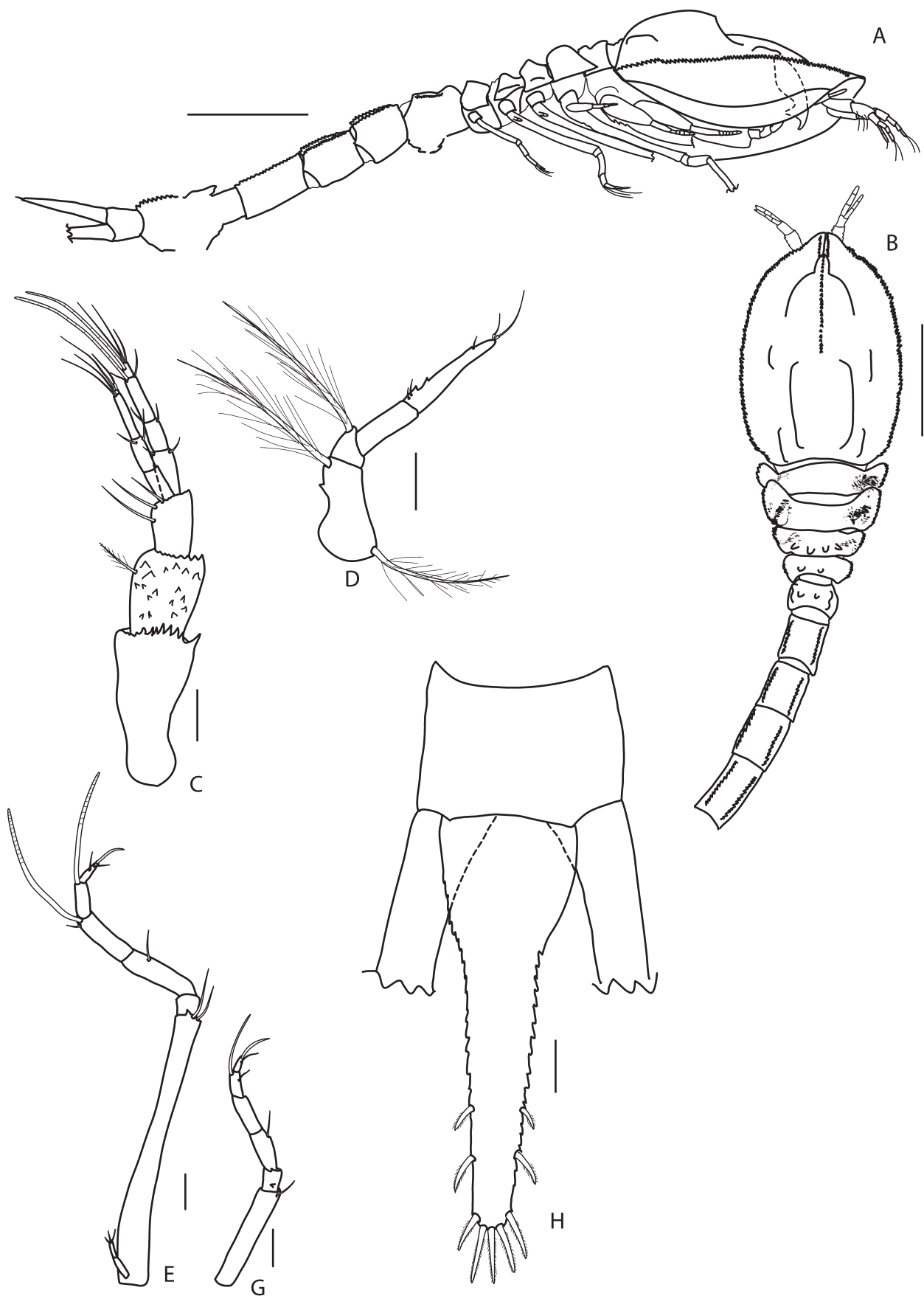


FIGURE 70. *Quasiparalamprops chathamensis* n. sp. Holotype subadult female NIWA 45701 A, side view; B, dorsal view; C, antennule; D, antenna; E, pereopod 4; G, pereopod 5; H, telson. Scale bars full body 1.0 mm, all others 0.1 mm.

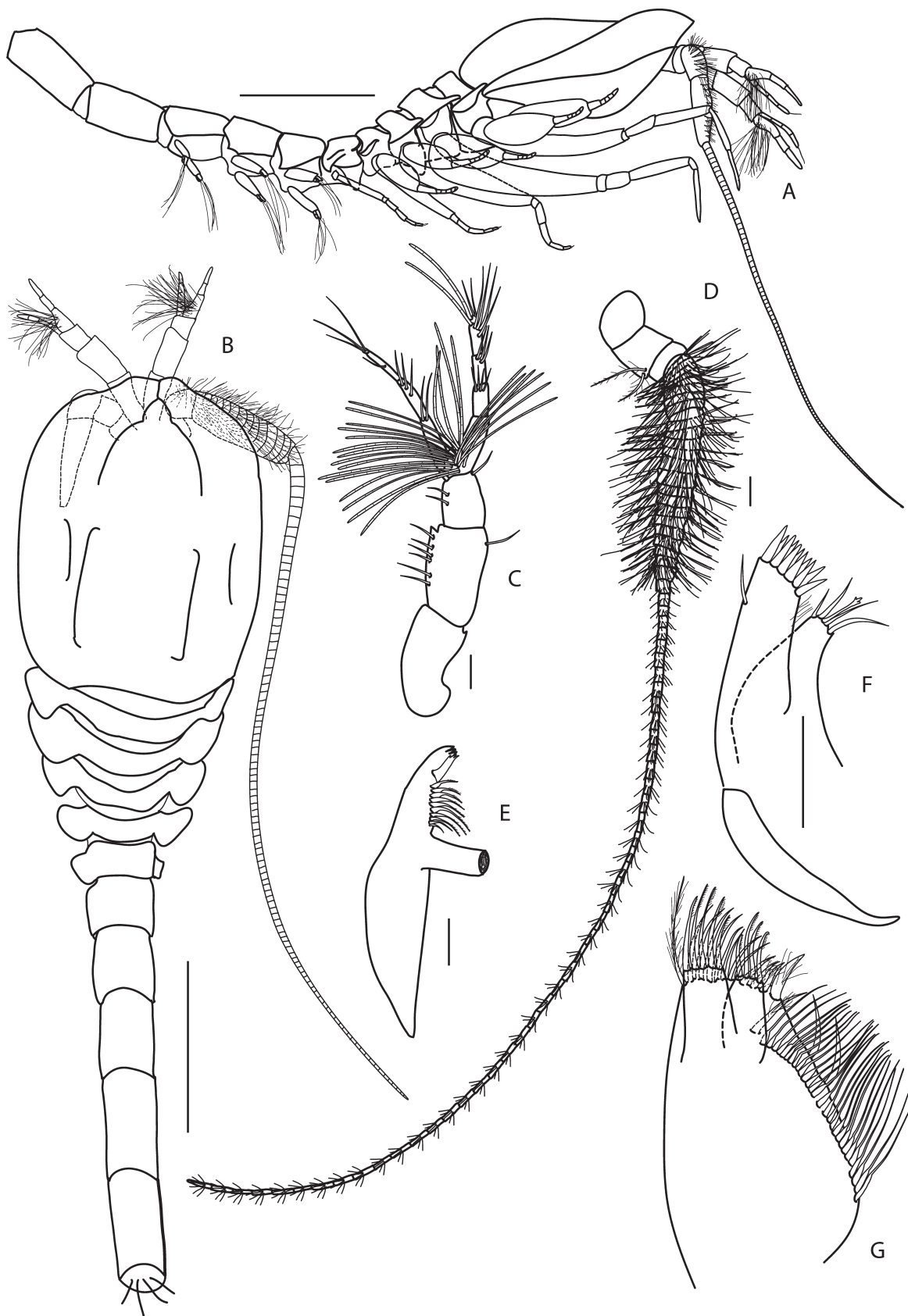


FIGURE 71. *Quasiparalamprops chathamensis* n. sp. Paratype adult male NIWA 45702 A, side view; B, dorsal view; C, antennule; D, antenna; E, mandible; F, maxillule; G, maxilla. Scale bars full body 1.0 mm, all others 0.1 mm.

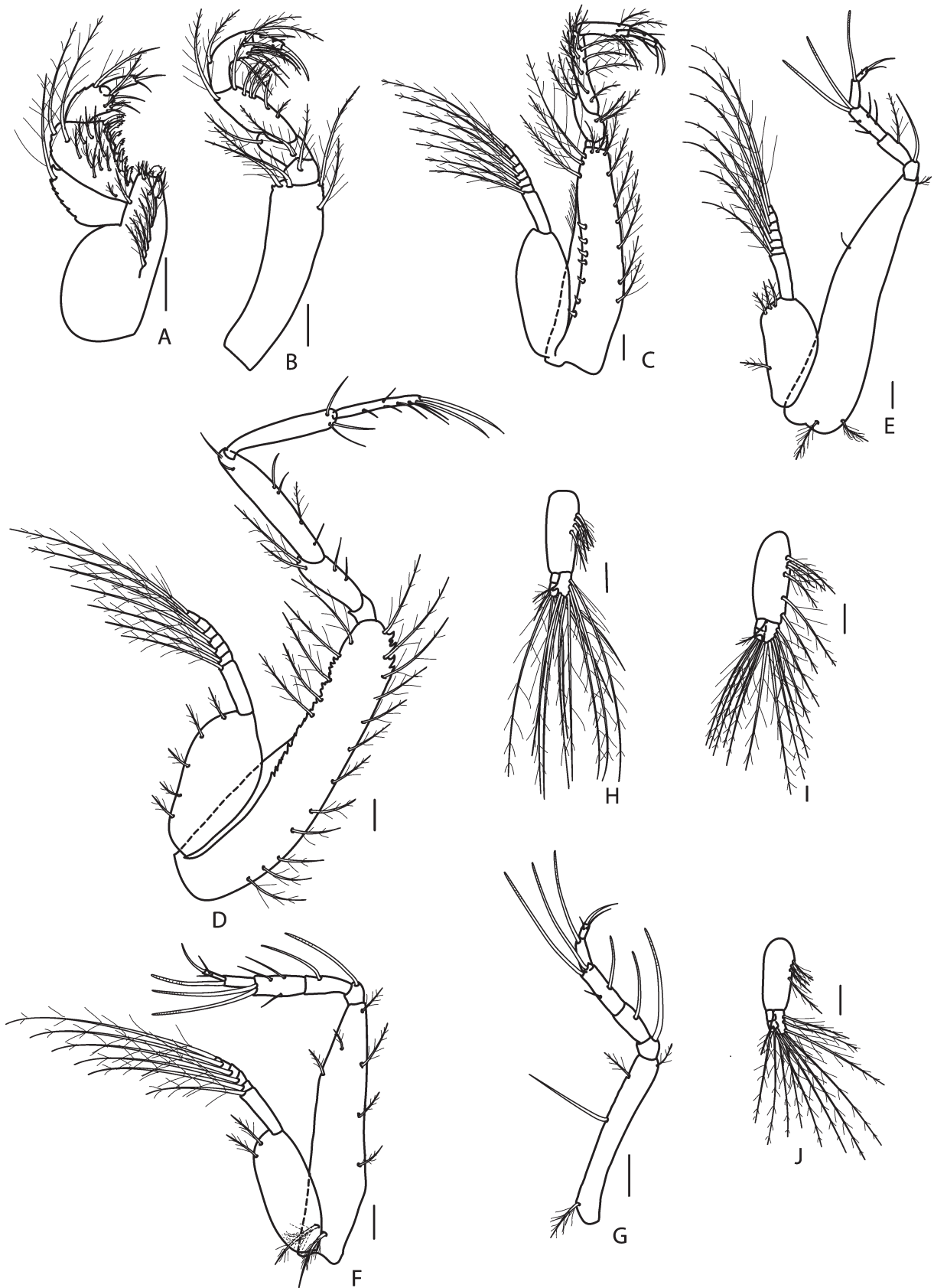


FIGURE 72. *Quasiparalamprops chathamensis* n. sp. Paratype adult male NIWA 45702 A, maxilliped 1; B, maxilliped 2; C, maxilliped 3; D, pereopod 1; E, pereopod 2; F, pereopod 3; G, pereopod 5; H, pleopod 1; I, pleopod 2; J, pleopod 3. Scale bars 0.1 mm.

Pleopod 1 biramous, basal article with 4 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 72H).

Pleopod 2 biramous, basal article with 5 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 72I).

Pleopod 3 biramous, basal article with 4 plumose setae; medial ramus with projection, both rami with long plumo-annulate setae (Fig. 72J).

Telson and uropods missing.

Etymology. The species is named *chathamensis* for the place of collection, Chatham Rise.

Depth. 1076–1103 m.

Distribution. Chatham Rise, New Zealand, 44.6°S, 176.5°W.

Remarks. *Quasiparalamprops chathamensis* n. sp. can be distinguished from species of *Paralamprops* and *Platytyphlops* by the maxillule palp without setae. Both maxillules in the adult male were observed, and neither setae nor setal bases were present.

***Reyssia* n. gen.**

Platytyphlops.—Reyss, 1978b: 74–77, figs 2–3.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible unknown. Maxillule palp unknown. Pereopod 1 slender. Pereopod 5 shorter than pereopod 4 basis. Telson short, 0.5 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4. *Male* with short but non-clasping antenna, without penial lobes, without pleopods.

Etymology. The new genus is named *Reyssia* in honor of Daniel Reyss, who originally described the type species (as *Platytyphlops lathierae*). Gender feminine.

Type species. *Platytyphlops lathierae* Reyss, 1978b.

Remarks. *Platytyphlops* was erected by Stebbing (1912) to accommodate a new species, *P. peringueyi*, based on males without pleopods. However, Stebbing's material only included early juvenile males. Stebbing (1912) included *Platyaspis orbicularis* in *Platytyphlops*, because the description of the species by Calman (1905) was incomplete and adult males were not known. However, Calman (1912) completed the description of *Platyaspis orbicularis*, including adult males with 3 pairs of pleopods, and transferred the species to *Paralamprops* (transferred herein to *Platytyphlops*). Day (1978) described the adult male of *P. peringueyi*, with 3 pairs of pleopods, and also transferred the species to the genus *Paralamprops* (transferred herein to *Platytyphlops*). This effectively placed *Platytyphlops* in synonymy with *Paralamprops*, but *Platytyphlops* has been resurrected (see remarks for *Platytyphlops*). However, Reyss (1978b) described a new species, *Platytyphlops lathierae*, a species in which the males are without pleopods, but which cannot be accommodated in *Platytyphlops* as resurrected. Băcescu (1988) declared "*Platytyphlops lathierae*" *incertae sedis* and suggested that a new genus would need to be erected to accommodate the species. The genus *Reyssia* is therefore erected for the species described as *lathierae* Reyss, 1978b.

***Reyssia lathierae* (Reyss, 1978b) n. comb.**

Platytyphlops lathierae Reyss, 1978b: 74–77, figs 2–3.

"*Platytyphlops*" *lathierae*.—Băcescu, 1988: 30.

Type material. Syntypes: deposition unknown. Dakar-Recife transect, 7°58'S, 34°17'W and 8°03'S34°23'W. Not seen.

Diagnosis. Carapace marginal carina smooth, without denticles; telson with 1 pair of lateral setae.

Depth. 587–1007 m.

Distribution. Central South Atlantic, 7–8°S, 34°W.

Remarks. This species is only known from the type material, from two stations on the 1967 Dakar-Recife transect (Reyss, 1978b); however, the description is adequate to identify the species.

Stenotyphlops Stebbing, 1912

Stenotyphlops Stebbing, 1912: 162; 1913, 156–157.—Day, 1978: 143.

Type species. *Stenotyphlops spinulosus* Stebbing, 1912, by monotypy.

Diagnosis. Carapace dorsoventrally flattened, marginal carina present, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 1 seta. Pereopod 1 slender. Pereopod 5 much shorter than pereopod 4 basis, reduced to 2 articles. Telson long, more than 2/3 length of uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 0.2 length of article 2, or less. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with short antenna, extending to end of pereon, without penial lobes, with 3 pairs of pleopods.

Species. *Stenotyphlops spinulosus* Stebbing, 1912.

Remarks. This genus was originally described by Stebbing in 1912, from a single specimen. In 1978 J. Day, with additional material, expanded the description to include the adult male. Both Stebbing and Day were working with material from off the coast of South Africa.

Stenotyphlops spinulosus Stebbing, 1912

Stenotyphlops Stebbing, 1912: 162; 1913, 156–157.—Day, 1978: 143, figs 2–3.

Type material. Holotype: NHM, female. Presqu’île du Cap, 34°25’S, 17°50’E. Not seen.

Other material. 1 male, 3 females, 4 juveniles, SAMC A10602; 1 adult male, 1 adult female SAMC A10607; male SAMC 60; 1 male, 1 ovigerous female, SAMC 103; 2 females, SAMC 123; 1 male, 1 female, SAMC 129. Not seen.

Diagnosis. Carapace with 3 rows of denticles, inflated posteriorly.

Depth. 370–1200 m

Distribution. Off South Africa, 27–34°S, 17–32°E.

Remarks. This species has only been recorded twice, in Stebbing (1912) and Day (1978). The original description was somewhat sparse; however, Day (1978) amply redescribed the species, including both sexes.

Typolamprops Reyss, 1978a

Typolamprops Reyss, 1978a: 3–7.

Type species. *Typolamprops hudsoni* Reyss, 1978a, by monotypy.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum at least 0.5 length of main flagellum. Mandible navicular. Maxillule palp unknown. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson longer than uropod peduncles. Uropod endopod of 3 articles. Uropod exopod article 1 short. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with long antenna, without penial lobes, with 3 pairs of pleopods.

Species. *Typolamprops hudsoni* Reyss, 1978a.

Remarks. This genus has only been collected twice, as recorded in Reyss 1978a, with 76 and 55 specimens per collection. However, the deposition of the specimens, including the type material, is unknown.

***Typolamprops hudsoni* Reyss, 1978a**

Typolamprops Reyss, 1978a: 3–7, figs 1–2.

Type material. Syntypes: deposition unknown. Atlantic Coast of the USA, 39°37'N, 66°47'W. Not seen.

Diagnosis. Carapace short, not flattened.

Depth. 2178–3806 m.

Distribution. Northwest Atlantic, 39°N, 66°W.

Remarks. Despite the number of specimens collected, there were no adult males, and no individuals with complete uropods (Reyss, 1978a). All the specimens had the uropod exopod broken.

***Watlingia* Gerken, 2010**

Watlingia Gerken, 2010: 296.

Type species. *Watlingia cassis* Gerken, 2010, by original designation.

Diagnosis. Carapace not dorsoventrally flattened, marginal carina absent, eyelobe present, pseudorostral lobes short, blunt. Antennule flagella well developed, accessory flagellum longer than 0.5 length of main flagellum. Mandible navicular. Maxillule palp with 1 seta. Pereopod 1 slender. Pereopod 5 longer than pereopod 4 basis. Telson long, more than 2/3 length of uropod peduncles. Uropod endopod of 2 articles. Uropod exopod article 1 less than 0.5 article 2 length. *Female* with fully developed exopod on pereopod 2, rudimentary exopods on pereopods 3–4, without pleopods. *Male* with antenna extending past pereon, but not past pleonite 3, with penial lobes, with 3 pairs of pleopods.

Species. *Watlingia cassis* Gerken, 2010, *W. chathamensis* Gerken, 2010.

Remarks. The maxillule palp with a single seta is only found in two other lampropid genera, *Stenotyphlops* and *Farragolamprops*, in both of which the uropod endopod is three articles. The two species of *Watlingia* are quite similar.

Key to the species of *Watlingia*

- 1. Carapace without tubercles *W. cassis*
- Carapace with paired tubercles on the carapace *W. chathamensis*

***Watlingia cassis* Gerken, 2010**

Watlingia cassis Gerken, 2010: 296–301, figs 1–4.

Type material. Holotype: NIWA 45709, subadult female. Paratypes: NIWA 45710, subadult female; NIWA 45711, subadult male; NIWA 45712, subadult male. Chatham Rise, 43.53–43.536°S, 178.505–178.512°E.

Other material. 4 juveniles, NIWA 45713, 43.53–43.536°, 178.505–178.512°, 346 m, 24 April 2007. 1 subadult female, NIWA 45714, 42.996–42.991°S, 178.996–179.005°E, 520–530 m, 24 April 2007. 5 individuals, NIWA 70509, 43.521–43.523°S, 178.620–178.632°W, 424–425 m, 18 April 2007. 3 individuals, NIWA 70510, 39.637–39.646°S, 172.153–172.152°E, 264–266 m, 7 June 2007.

Diagnosis. Carapace smooth, telson with 3 pairs of lateral setae.

Depth. 264–530 m.

Distribution. Chatham Rise, New Zealand, 42–43°S, 178°E.

Remarks. *Watlingia cassis* and *W. chathamensis* are very similar, but can be distinguished by carapace morphology, number of telson lateral setae and size. In *W. cassis* the carapace is without tubercles, while in *W. chathamensis* the carapace has 1–3 pairs of large tubercles and a pair of posterior dorsal swellings. In *W. cassis* the telson bears three pairs of lateral setae; in *W. chathamensis* the telson bears 4–5 pairs of lateral setae. *Watlingia cassis* is on the order of 3.5 mm or less when mature, while *W. chathamensis* is more than 4.5 mm when mature.

***Watlingia chathamensis* Gerken, 2010**

(Figs 73–75)

Watlingia chathamensis Gerken, 2010: 301–305, figs 5–6.

Type material. Holotype: NIWA 45715, subadult female. Paratype: NIWA 45716, subadult female, dissected. Chatham Rise, 42.996–42.991°S, 178.996–179.005°E.

Other material. 1 adult male, dissected, NIWA 94875, 43.826–43.827°S, 178.552–178.55°E, 463 m, 13 November, 2011. 1 ovigerous female, 3 other individuals, NIWA 93176; 2 individuals, NIWA 95409, 43.521–43.532°S, 178.62–178.632°W, 424–425 m, 18 April 2007. 3 individuals, NIWA 94507; 20 individuals, NIWA 95410; 2 individuals, NIWA 95411; 6 individuals, NIWA 95412, 44.486–44.484°S, 177.141–177.146°E, 1235–1239 m, 6 April 2007. 2 ovigerous females, 5 subadult females, 2 adult males, NIWA 70511, 44.121–44.124°S, 174.843–174.845°E, 512–513 m, 4 April 2007. 3 individuals, NIWA 70513; 2 individuals, NIWA 70514; 1 individual, NIWA 70515, 44.016–44.014°S, 178.521–178.518°E, 769–771 m, 7 April 2007. 4 individuals, NIWA 70512, 43.836–43.833°S, 176.709–176.713°E, 478–479 m, 5 April 2007. 3 individuals, NIWA 70516, 43.797–43.805°S, 175.316–175.315°E, 418–422 m, 27 April 2007. 1 subadult female, NIWA 93171; 1 adult male, NIWA 93206, 43.53–43.536°S, 178.505–178.512°E, 346 m, 24 April 2007. 3 individuals, NIWA 95406, 43.512–43.52°S, 176.18–176.711°W, 196–218 m, 14 April 2007. 3 individuals, NIWA 70517; 1 adult male, NIWA 93210; 2 individuals, NIWA 95408, 39.637–39.646°S, 172.153–172.152°E, 264–266 m, 7 June 2007.

Diagnosis. Carapace with 1–3 pairs large, blunt tubercles, paired posterior dorsal swellings, medial posterior dorsal crest on the carapace in side view, telson with 4–5 pairs lateral setae.

Additional description. Ovigerous female, NIWA 93176, 4.3–5.0 mm. Carapace with 2 large tubercles, posterodorsal swelling, and median unpaired crest posteriorly, carapace with ventral fold towards midline; pseudorostral lobes 0.3 carapace length, blunt; eyelobe 0.1 carapace length, with lenses; carapace 1.8–2.0 length of pereonites together (Fig. 73A, B).

Adult male, NIWA 94875, 4.3 mm.

Carapace with 1 pair large tubercles, posterodorsal swelling, medial unpaired crest posteriorly, carapace with ventral fold towards midline; pseudorostral lobes 0.4 carapace length; eyelobe 0.1 carapace length, with lenses; carapace 1.6 length of pereonites together. Pereonite 5 with pair of penial lobes (Fig. 73C).

Antennule peduncle article 1 0.9 length of articles 2 and 3 together, unarmed; article 2 0.7 article 1 length, with short simple setae; article 3 0.6 article 2 length, with short simple setae; main flagellum of 5 articles, article 1 with cluster of slender aesthetascs, with short simple setae distally and 2 aesthetascs terminally; accessory flagellum equal to main flagellum length, of 3 articles, with simple setae distally (Fig. 74A).

Antenna extending to mid pleon; peduncle of 5 articles; articles 4–5 with ranks of setae, incompletely circling articles; flagellum 3.0 peduncle length, with short articles, each with 1–2 short setae (Fig. 74B,C).

Maxilliped 3 basis 1.0 all other articles together, with pappose setae medially, distal corner with 3 plumose setae; ischium 0.06 basis length, with plumose seta; merus 2.3 ischium length, with plumose seta; carpus 2.8 merus length, with with plumose and semiple setae medially; propodus 0.6 carpus length, with 3 plumose setae medially, simple seta laterally; dactylus 0.5 propodus length, with 4 simple setae terminally; exopod 1.0 basis length, basal article unarmed, flagellum with plumo-annulate setae (Fig. 74D).

Pereopod 1 basis 0.9 all other articles together, margin serrate, distal corner produced as 2 large teeth, with many simple setae, 2 plumose setae distally; ischium 0.04 basis length, unarmed; merus 4.0 ischium length, with 4 simple setae; carpus 2.6 merus length, with 3 simple setae; propodus 0.8 carpus length, with 2 simple setae; dactylus 0.9 propodus length, with 5 simple setae and simple seta terminally; exopod 0.8 basis length, basal article with short plumose setae, sflagellum with plumo-annulate setae (Fig. 74E).

Pereopod 2 basis 0.8 all other articles together, margins serrate, with simple setae; ischium 0.08 basis length, with simple seta; merus 2.2 ischium length, with 2 simple setae; carpus 2.5 merus length, with 5 simple setae; propodus 0.3 carpus length, with simple seta; dactylus 3.1 propodus length, with 5 simple setae and simple seta terminally; exopod 0.9 basis length, basal article with short plumose setae, flagellum with plumo-annulate setae (Fig. 75A).

Pereopod 3 basis 1.8 all other articles together, with simple setae; ischium 0.05 basis length, with stout simple seta; merus 2.7 ischium length, with simple seta; carpus 1.3 merus length, with 2 annulate setae; propodus 0.7

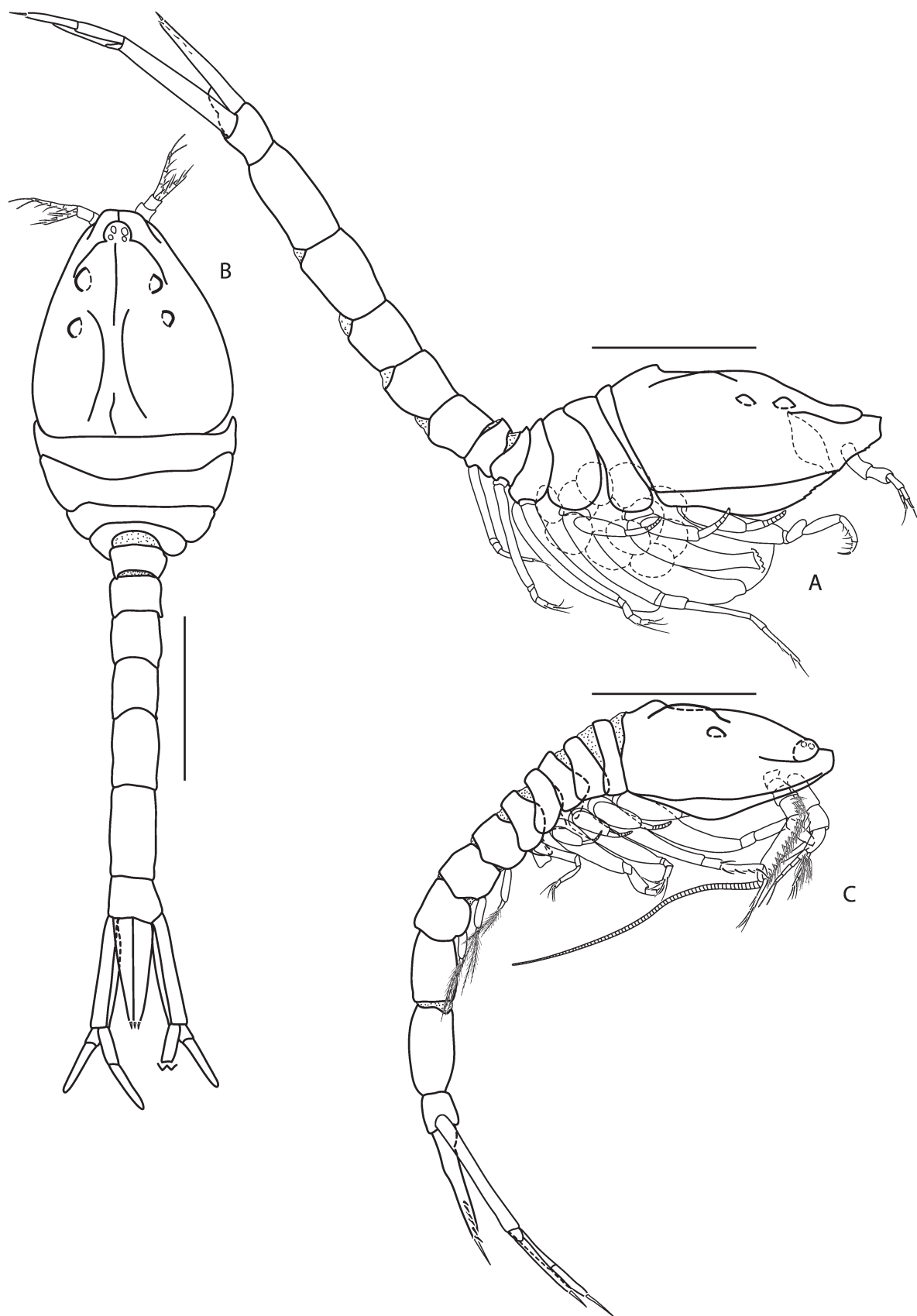


FIGURE 73. *Watlingia chathamensis*. Ovigerous female NIWA 93176, A, side view. Paratype preparatory female NIWA 93176, B, dorsal view. Paratype adult male NIWA 93176, C, side view. Scale bars full body 1.0 mm.

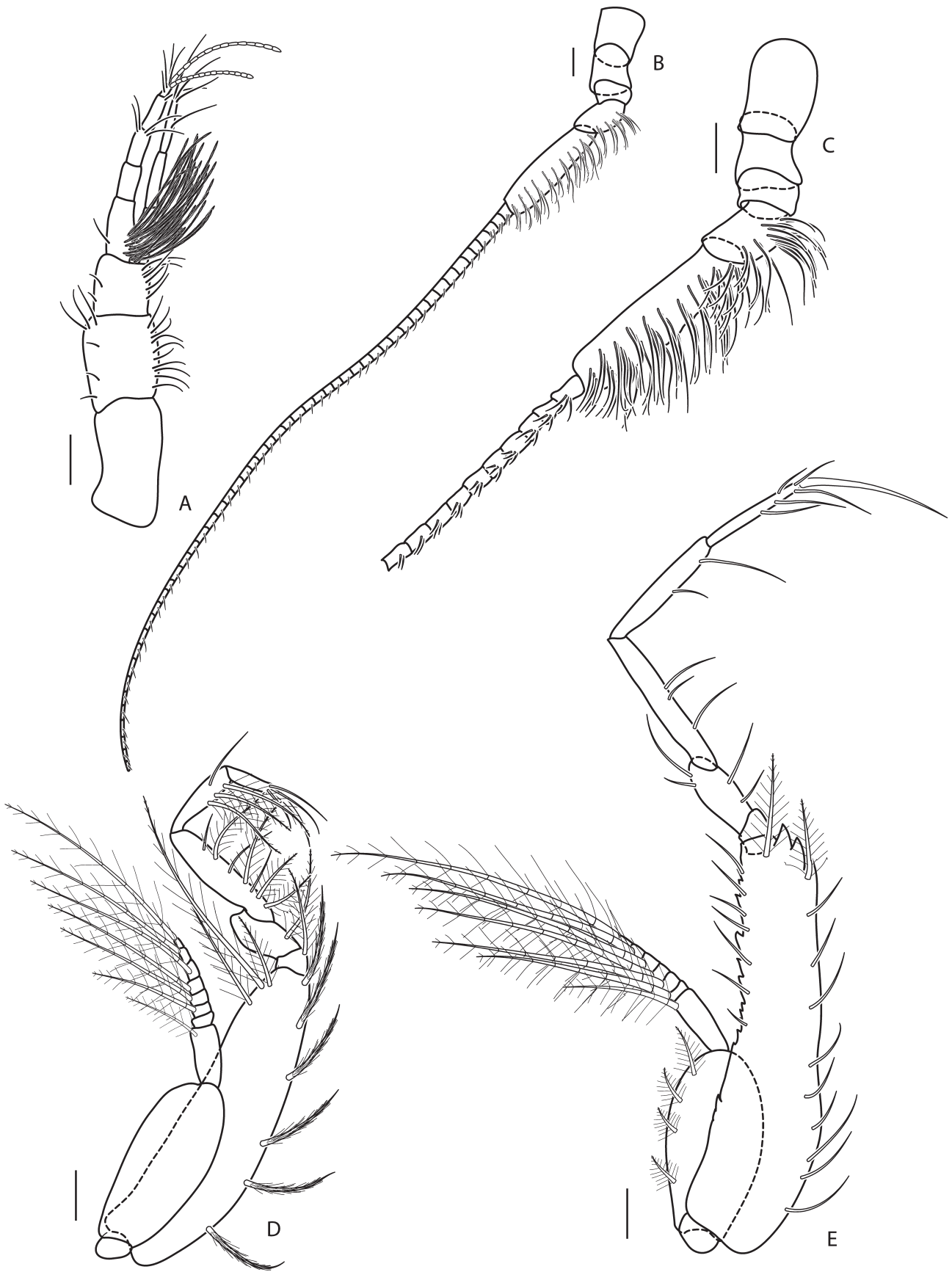


FIGURE 74. *Watlingia chathamensis*. Adult male NIWA 94875, A, antennule; B, antenna; C, antenna; D, maxilliped 3; E, pereopod 1. Scale bars 0.1 mm.

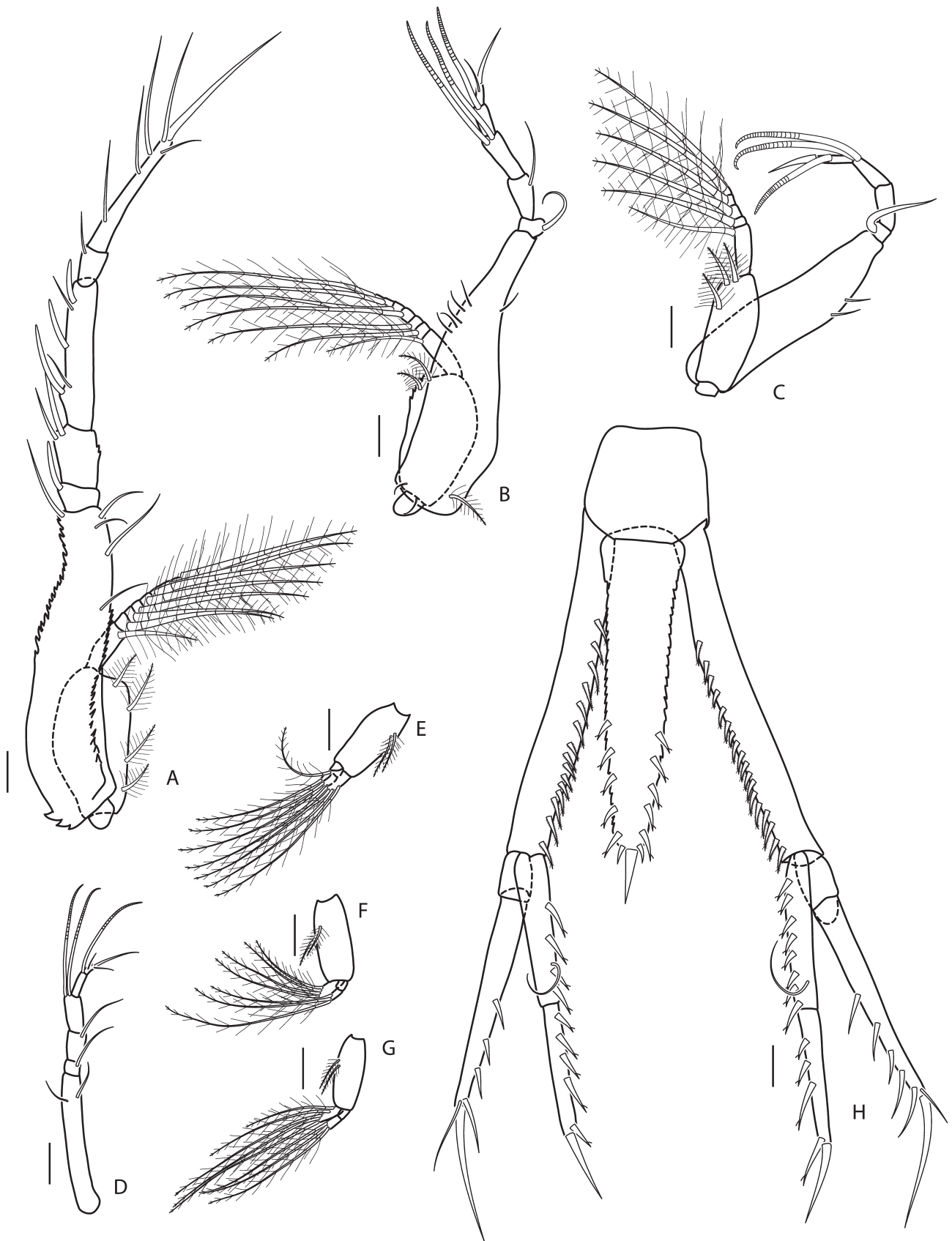


FIGURE 75. *Watlingia chathamesis*. Adult male NIWA 94875, A, pereopod 2; B, pereopod 3; C, pereopod 4; D, pereopod 5; E, pleopod 1; F, pleopod 2; G, pleopod 3; H, telson and uropods. Scale bars 0.1 mm.

carpus length, with annulate seta; dactylus 0.6 propodus length, with 2 simple setae terminally; exopod 0.9 basis length, basal article with short plumose setae, flagellum with plumo-annulate setae (Fig. 75B).

Pereopod 4 basis 1.7 all other articles together, with short simple setae; ischium 0.07 basis length, with stout simple seta; merus 2.7 ischium length, unarmed; carpus 0.9 merus length, with 2 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.6 propodus length, with simple seta terminally; exopod 0.9 basis length, basal article with short plumose setae, flagellum with plumo-annulate setae (Fig. 75C).

Pereopod 5 basis 1.2 all other articles together, with simple setae; ischium 0.1 basis length, with simple seta; merus 1.7 ischium length, with simple seta; carpus 1.4 merus length, with 2 annulate setae; propodus 0.7 carpus length, with annulate seta; dactylus 0.4 propodus length, with 2 simple setae and simple seta terminally (Fig. 75D).

Pleopod 1 longest pleopod, basis with 2 plumose setae, rami with long plumo-annulate setae (Fig. 75E).

Pleopod 2 basis with 2 plumose setae, rami with long plumo-annulate setae (Fig. 75F).

Pleopod 3 shortest pleopod, basis with 2 plumose setae, rami with long plumo-annulate setae (Fig. 75G).

Telson 2.6 length of pleonite 6, lateral margins weakly serrate, with 5 simple setae with single subterminal setule laterally, 3 simple terminal setae, central seta much longer and stouter than outer pair (Fig. 75H).

Uropod peduncles 2.9 pleonite 6 length, 1.1 telson length, with 15–18 microsetate setae single subterminal setule medially. Uropod endopod of 2 articles, 0.8 peduncle length; article 1 with 4–8 setae with single subterminal setule medially, with curved simple seta laterally; article 2 0.9 article 1 length, with 5 simple setae with single subterminal setule medially, terminal simple seta 0.6 article length. Uropod exopod 0.9 length of endopod; article 1 0.2 length of article 1, unarmed; article 2 4.2 article 1 length, with 5–6 simple setae, terminal simple seta 0.7 article length (Fig. 75H).

Depth. 322–760 m

Distribution. Chatham Rise, New Zealand, 43°00–44°30.1'S, 174°18.8'–179°00'E.

Remarks. *Watlingia cassis* and *W. chathamensis* are very similar, but can be distinguished by the number of telson lateral setae and the carapace morphology. In *W. cassis* the telson bears 3 pairs of lateral setae; in *W. chathamensis* the telson bears 4–5 pairs of lateral setae. In *W. cassis* the carapace is without tubercles, while in *W. chathamensis* the carapace has 1–3 pairs of large tubercles, a pair of posterior dorsal swellings, and a median posterior crest. The posterior dorsal swellings are the most easily visible distinguishing characteristic, making a distinct dorsal hump in the side view, while the tubercles vary amongst individuals and may not be very obvious. In addition, *W. chathamensis* is larger than *W. cassis*, being closer to 5 mm in length while *W. cassis* is closer to 3 mm. In the samples examined, *W. chathamensis* is also much more commonly encountered than *W. cassis*, although they do co-occur.

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